

Third age learners and ICT: Training and support issues

by

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**Submitted in fulfilment of the requirements
for the degree of Doctor of Philosophy**

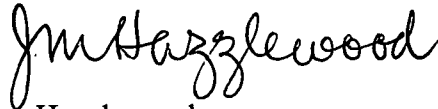
University of Tasmania

2006

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ACKNOWLEDGEMENTS

Firstly, I would like to thank my supervisor for the bulk of my candidature, Associate Professor Sue Kilpatrick for her invaluable support, untiring patience and objective advice during both my Masters and my Doctoral studies, also my co-supervisor in the last months of my candidature, Dr. Thao Le.

Secondly, I wish to thank University of Tasmania, Launceston, Education Faculty members Dr. Margaret Barrett and Dr. Margaret Robertson and Professor Ian Falk, now at Charles Darwin University, also fellow postgraduate students Susan Johns, Tammy Jones, Dr. Rosa McManamey, Dr. Pat Millar, Tony Smith and Dr. Paul Throssell.

Thirdly, I wish to acknowledge the support and generosity in sharing of information by Ros Foskey, e-mail list manager of NEAT, the network of education, ageing and technology, University of New England, Armidale New South Wales, and NEAT members including Dr. Karen Barnett, Nan Bosler, Meri Forest, Helen Scott, Dr. Rick Swindell, Dr. Deborah West and Dr. Kirsty Williamson.

Last but not least importantly, I thank my husband Bert, without whose unstinting and selfless support and encouragement I could not have started, continued or completed the post-retirement return to formal study journey.

ABSTRACT

An increasing number of older adults joining the third age of active retirement are learning to use computers to access information and communication technology (ICT) for a variety of intrinsic and extrinsic reasons. This thesis describes a three year research study of a group of such men and women, aged fifty and older, who live in a regional Australian community.

Answers are sought to the questions how, when, where, why or why not these older adults are learning to use computers and to access the Internet in later life. The primary focus is on the effect that available and affordable training and support has on the gaining of the skills necessary to achieve the ICT literacy that is required to function in a rapidly changing technological globalised society.

The study seeks to identify the factors which foster or inhibit both the uptake and the continuing use of those aspects of computer generated technology which match the needs, interests and aspirations of third age learners living longer lives in an economically and socially advantaged society such as Australia.

The implications of the study to a range of stakeholders are both social and economic, as older adults enter the third age of active retirement earlier and remain there longer and seek to learn about and via new technology by choice or from necessity. The background to the research project is sketched, seminal and recent theoretical and practical research literature and government policy reports are reviewed. The results of data gathered during this study are discussed and opportunities for further research are indicated.

The qualitative natural ethnographic research methodology chosen employs semi-structured interviews, participant observation, focus groups, case studies and document examination. A series of filters were employed in an attempt to assess the nature, the extent and the use made of the new knowledge and skills acquired. The initial coding of the data resulted in a broad grouping of participants into early and later adopters of ICT. A further categorising within these groups led to the

development of the concept of adult literacy (Hazzlewood 2004), which identifies two-dimensional and three-dimensional ICT uptake and use.

The main findings from this study relate to adult learning theory, research and practice in general and, since the advent of the Internet, about the transfer of these adult learning concepts to third age ICT learning. Other findings relate to more specific aspects of the available and affordable ICT training and ongoing support offered to older adults, and to the implications for a range of stakeholders.

Volunteer service human capital is found to contribute to the well being of the individual learners, their families and friends, as well as adding social capital to both the local and the wider community. The study, however, finds a lack of relevance and effectiveness of a training and support system for older adults dependent almost entirely on dedicated but largely untrained peer volunteer contribution. Implications for policy makers and keepers of the public purse are indicated as an urgent need is identified for the adoption of a broad strategic approach to equitable 'age neutral' (Stretton 2005) training and support. This need for a vision for the future, which is designed to include rather than exclude older adults, is critical as the age imbalance is marked by global greying.

CONTENTS

ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
GLOSSARY	x
CHAPTER ONE: BACKGROUND TO THE RESEARCH	1
INTRODUCTION	1
THE STRUCTURE OF THE THESIS	3
SIGNIFICANCE OF THE RESEARCH PROJECT	3
ESTABLISHMENT OF ICT-LINKED POST-RETIREMENT NETWORKS	4
ICT LITERACY: AN INTEGRAL PART OF CONTEMPORARY SOCIETY	5
CHANGE AND CHOICE, TRENDS AND MEGATRENDS	7
MYTHS AND STEREOTYPES ABOUT AGEING	11
POSITIVE AGEING	14
NEW TECHNOLOGY LEARNING FOR OLDER ADULTS	14
THE RESEARCH QUESTIONS	15
CONCLUSION	16
CHAPTER TWO: REVIEW OF THE LITERATURE	17
INTRODUCTION	17
THEORY, RESEARCH, POLICY AND PRACTICE	17
THEORIES ON AGEING	18
RESEARCH QUESTION 1	22
INTRODUCTION	22
ADULT EDUCATION TO ADULT LEARNING	23
LIFELONG LEARNING	24
LEARNING IN LATER LIFE	27
LEARNING ICT IN RETIREMENT	27
EARLY AND LATER ADOPTERS OF NEW TECHNOLOGY	28
NON ADOPTERS OF NEW TECHNOLOGY	31
COMPUTING AS A SECOND LANGUAGE	32
EARLY CHILDHOOD EXPERIENCES	34
COGNITIVE AGEING ISSUES	35
SUMMARY	38
RESEARCH QUESTION 2	39
INTRODUCTION	39
LEARNING STYLES AND PREFERENCES	39
MOTIVATION OR MOBILISATION	42
GENDER AND AGE DIFFERENCES	42
AGE DIFFERENCES	46
SUMMARY	47
RESEARCH QUESTION 3	47
INTRODUCTION	47
OLDER ADULTS AND DIGITAL DIVIDES	48
COST AND AVAILABILITY OF RESOURCES	49
DIGITAL MYTHS	51
ADULT LITERACY	53
ACCESS TO ICT FOR OLDER ADULTS	54
AGE RELATED IMPAIRMENTS	55
SOCIAL ISOLATION	55
SUMMARY	56
RESEARCH QUESTION 4	57
INTRODUCTION	57
THE ADULT LEARNER	57
THE LIFELONG LEARNER AND ICT	60
THE OLDER ADULT LEARNER	61
THE TRAINER OR FACILITATOR	63
THE POLICY MAKER	63
SUMMARY	65
RESEARCH QUESTION 5	66

INTRODUCTION	66
DIVERSITY OF INTERESTS	67
HEALTH RELATED ISSUES	67
VOLUNTARY COMMUNITY SERVICE	68
THE LEARNING COMMUNITY	71
SUMMARY	74
CONCLUSION	74
INTRODUCTION	76
WHY QUALITATIVE RESEARCH?	76
INTERPRETIVIST RESEARCH	80
NATURALISTIC RESEARCH	80
THE RESEARCH METHOD	81
THE RESEARCH DESIGN	82
THE SAMPLE CHARACTERISTICS	83
RECRUITMENT OF THE SAMPLE	84
DATA GATHERING	84
TABLE 1	85
SEMI-STRUCTURED INTERVIEWS	86
FOCUS GROUPS AND CASE STUDIES	87
PARTICIPANT OBSERVATION	87
OWN ORGANISATION RESEARCH	92
COLLABORATIVE RESEARCH	92
DATA ANALYSIS	94
THE FIRST CODING FILTER	95
THE SECOND CODING FILTER	96
THE THIRD FILTER	97
ADULT LATERACY CODING	97
TWO AND THREE DIMENSIONAL ICT USERS	98
CONCLUSION	101
CHAPTER FOUR: RESULTS AND FINDINGS THE COMPUTER CENTRE...	102
INTRODUCTION	102
RESEARCH QUESTION 1	104
ONLINE LEARNERS	104
VOLUNTEER SUPPORTED ONLINE LEARNING	104
LEARNERS AND TUTORS	111
EARLY AND LATER ICT ADOPTERS	111
COGNITIVE AGEING ISSUES	117
SUMMARY	119
RESEARCH QUESTION 2	120
LEARNING STYLES	121
MOTIVATION	121
LEARNING MATCHING NEEDS OF OLDER ADULTS	123
FOCUS ON NOVICE LEARNERS AT THE COMPUTER CENTRE	124
GENDER EQUITY ISSUES	127
AGE DIFFERENCES	128
SUMMARY	128
RESEARCH QUESTION 3	129
ICT UPTAKE BARRIERS AND INCENTIVES	129
COST AND AVAILABILITY	130
LITERACY AND NUMERACY PROBLEMS	130
ACCESSIBILITY	131
ACTUAL AND VIRTUAL PEER NETWORKS	131
SUMMARY	132
RESEARCH QUESTION 4	132
THE LEARNER	133
THE TRAINER	134
FOCUS ON COMPUTER CENTRE TUTOR TEAM MEETING	135
SUMMARY	140
RESEARCH QUESTION 5	140

DIVERSITY OF INTERESTS	140
VOLUNTARY COMMUNITY SERVICE IN RETIREMENT	142
SUMMARY	142
CONCLUSION	143
CHAPTER FIVE: RESULTS FOCUS GROUPS AND CASE STUDIES	147
INTRODUCTION	147
FOCUS ON COMMUNITY GROUP VOLUNTEERS	149
THE GREYING OF THE NGOs.....	149
SUMMARY	156
FOCUS ON FURTHER EDUCATION IN 'RETIREMENT'	158
INTRODUCTION	158
INCENTIVES AND BARRIERS TO ICT LEARNING	167
MATURE AGE STUDENTS AND ICT	168
SOCIAL CAPITAL ISSUES.....	169
PAM'S STORY RETIREMENT INTO, NOT OUT OF, THE COMMUNITY	170
QUEENIES' STORY ONE WOMAN'S WAY OF KNOWING.....	174
ALF AND JAE A CYBER-SENIOR PARTNERSHIP	178
SUMMARY	184
AMES FOCUS GROUP:.....	185
A MULTICULTURAL PERSPECTIVE	185
SUMMARY	189
CONCLUSION	189
CHAPTER SIX: DISCUSSION AND CONCLUSION.....	191
INTRODUCTION	191
RESEARCH QUESTION 1 FINDINGS	197
RESEARCH QUESTION 2 FINDINGS	207
RESEARCH QUESTION 3 FINDINGS	213
RESEARCH QUESTION 4 FINDINGS	221
RESEARCH QUESTION 5 FINDINGS	227
SUMMARY OF RESEARCH QUESTIONS FINDINGS	231
OPPORTUNITIES FOR FURTHER RESEARCH.....	232
CONCLUSION	233
REFERENCES	236
Abaya C. (1992). <i>Sandwich Generation</i> . Retrieved 5/6/04, from http://www.TheSandwichGeneration.com	236
APPENDIX A: LITERATURE REVIEW CORE PAPER SUMMARY	259
APPENDIX B: INFORMATION SHEET, CONSENT FORM AND INTERVIEW QUESTIONS.....	265
APPENDIX C: CANADIAN/AUSTRALIAN STUDY INFORMATION SHEET, CONSENT FORM AND INTERVIEW QUESTIONS	269
Australian and Canadian Percentages for Survey Responses on a 5-Point Likert Scale	272
APPENDIX D: AMES STUDY INFORMATION SHEET, CONSENT FORM AND INTERVIEW QUESTIONS	273
APPENDIX E: THESIS DATA ANALYSIS TRANSCRIPT EXCERPT.....	281

TABLES

TABLE 1: DATA GATHERING AND DATA ANALYSIS.....85

TABLE 2: EARLY ICT ADOPTERS99

TABLE 3: LATE ICT ADOPTERS100

TABLE 4: COMPUTER CENTRE SAMPLE CHARACTERISTICS103

TABLE 5: FOCUS GROUP/CASE STUDY SAMPLE CHARACTERISTICS148

GLOSSARY

ABS	Australian Bureau of Statistics.
ACE	Adult Community Education
ALNARC	Adult Literacy and Numeracy Australian Research Consortium.
ANTA	Australian National Training Authority
ATM	Automatic Teller Machine
CIRCIT	Centre for International Research on Communications and IT
DCITA	Department of Communications Information Technology and the Arts.
DEST	Department of Education, Science and Training, Australia.
EFTPOS	Electronic Funds Transfer at Point of Sale
ICT	Information and Communication Technologies
IFLA	International Federation of Libraries Associations
IL	Internet literacy
IT	Information Technology
MRI	Magnetic Resonance Imaging
NGO	Non-Government Organisation
NIACE	National Institute of Continuing Education
NUA	Scope Communications Group, Dublin, Ireland.
OECD	Organisation for Economic Cooperative Development
PEW	American Research Center For The People & The Press
QANTAS	Queensland and Northern Territory Air Service
RMIT	Royal Melbourne Institute of Technology
TASCOSS	Tasmanian Council of Social Services
U3A	University of the Third Age

CHAPTER ONE: BACKGROUND TO THE RESEARCH

INTRODUCTION

There are a variety of ways in which seniors can continue to work and continue to learn both during the final years of their careers and into their retirement. (Jarvis, p.95, 2001)

Australia's population in the early 21st century is ageing as a result of the increased life expectancy of both men and women in retirement. This is due in part to medical advances and healthy lifestyle choices. At the same time the falling birth rate and immigration is impacting on the percentages of the old and the young in the population. This national population trend parallels the global ageing demographic reported by Toomel (2001), and is particularly noticeable in Tasmania, which state has overtaken South Australia as the Australian State with the highest proportion of people over sixty years of age. This trend highlights the significance of the primary focus in this thesis, which is on issues affecting older men and women learning about and via new technology, and the implications for stakeholders in, or involved with, the third of Laslett's (1989) four life stages—the age of active retirement. Laslett's 'third age' concept is described by Hurworth and Crombie (1995) as socio-cultural with obvious biological and demographic underpinnings, as an age of independence and opportunity for self-development by Manheimer, Snodgrass and Moscow-McKenzie (1995) and as a 'post work' period by Withnall (2006).

The numbers in the third age are continually increasing and the age range is extending as entry is gained through early retirement and premature workplace redundancy and as exit into the fourth age of dependency is delayed. Third age ranks are further swelled by post World War II baby boomers—those born between the mid-1940s and the mid-1960s. The resulting population age imbalance is increasingly looked upon as a disaster that will impact on the young, who are expected to carry the economic burden of this increased longevity of the aged. Horst (1999), for example, states that this imbalance means that in the foreseeable future, there will be fewer workers, who will be expected to support a greater number of retirees.

In a Tasmanian Seniors Bureau (2005) discussion paper, it is reported that by 2019 in the OECD countries, one in four people will be over sixty years of age. The paper states further that 70 million people will retire during the next 25 years and will be

replaced by only 5 million new workers. These figures, when contrasted with the previous period when 45 million retirees are reported to have been replaced by 120 million baby boomer workers, add substantially to the significance of information and communication technology (ICT) literacy acquisition by all post-compulsory education cohorts. These figures also reinforce the urgency of the provision of appropriate and affordable ICT training and support, which is essential not only to fill the inevitable employment void, but also to ensure that the experience and enthusiasm that older adult volunteers contribute to community social capital is not lost and that large numbers of third age learners are not marginalised. There are implications here for all stakeholders, including government policymakers at local, state and federal levels, non-Government organisations (NGOs), service and training providers, researchers and individual third age learners themselves.

The demographic of ageing constantly features in government reports, academic research and the popular media. In Tasmania, for example, Jackson (2005) writes that the Tasmanian population shows a significant and sustained rate of growth despite the brain drain caused by the departure of younger people for interstate and overseas destinations. Jackson states that this outflow is more than compensated for by the arrival of post-World War II baby boomers and older adults in the Tasmanian island state. For example, in 2003, almost 50% of the 29 to 65 age group, who arrived in Tasmania were aged between 50 and 64. Jackson reports that 10,000 more adults over 65 are added to Tasmania's population every five years by both natural addition and new arrivals. In what could be called a brain gain, this exchange also adds to the age imbalance in this regional Australian area.

McCrindle (2005) reports that the Australian population has doubled since 1960 with members of 'generation X', those born between 1965 and 1981 and 'generation Y', those born between 1982 and 2000, making up 51% of the population. Those over 60, born before 1946, the 'builders', account for 15%. As the first of the baby boomers born between 1946 and 1964, swell the third age numbers to somewhere above 25% of the population. McCrindle states that it is a common but unfounded myth that Generation X will bear the burden of Australia's ageing society. Warburton and Bartlett (2004) also decry the negative ageing problem mantra, suggesting that the opportunities should be considered as well as the challenges. They suggest a change

in emphasis, which acknowledges the positive and extensive, if largely unrecognised, contribution of older people to social capital and civil society.

THE STRUCTURE OF THE THESIS

The thesis is arranged in six chapters. This chapter provides the background to the research project and the demographics affecting the distribution of older adults in a globalised society. It outlines the choices available to third age learners in a constantly changing technological age. Trends are indicated that shape these changes where older adults have little choice but to learn new skills to avoid being marginalised in a youth-skewed society (Williamson, Bow & Wale 1997; Barnett & Adkins 2004; Paul & Stegbauer 2005). The myths and stereotypes of ageing are touched on as well as the new learning needed for transfer of adult learning skills to computer-based, ever changing new technology. The research study questions are introduced at the end of the chapter. In Chapter 2, literature relating to the research questions is reviewed. In Chapter 3 the history and development of both quantitative and qualitative methodology paradigms is outlined and the methodology employed in this study is discussed and justified. The concept of adult lateracy (Hazzlewood 2004), the categorising of sample participants according to the nature and extent of their ICT use, is introduced and developed. Chapters 4 and 5 present the results and discussion from an analysis of the data gathered from observation, interviews, focus groups, case studies and documents provided by sample participants. Implications for stakeholders are mentioned as they occur in each chapter. Chapter 6 contains discussion of the results recorded in Chapters 4 and 5 as they relate to the questions asked and the literature reviewed. Topics for further research are identified.

SIGNIFICANCE OF THE RESEARCH PROJECT

The primary focus of this thesis is on issues of third age learning as men and women in retirement seek voluntarily, or of necessity, to learn to use computers to access the new technology available in the early 21st century. Throughout this thesis, information and communication technology is referred to as ICT, except where quoted literature refers simply to IT—information technology. A secondary focus is on the implications for trainers and policy makers and the impact on the learners' family and friends and the wider community. The significance of the study lies in the expected need for older adults to retire later or to come out of retirement to return to

the paid or volunteer workforce, where they will need ICT skills, as well as in their everyday lives. As the greying of society is a focus in many countries and many sectors, and as the technology age is giving way to the global connectivity age (Davis 2003), the need for ICT literacy for third age learners intensifies. ICT literacy training and support for older adults in 'retirement' is needed now and will be for the next few years until the younger X, Y and Z techno-generations inhabit what is already promising to be a very different third age from the present one. New strategies will then be needed for a future, as yet unpredictable, age.

- This research project is conducted by an 'insider', a third age learner, who is accessing new technology herself and who has assumed the pseudonym of Jenni in this thesis. The study aims to provide an overview of third age ICT learning opportunities in an urban/regional area and also to narrate some of the cyber experiences of her fellow travellers on the 'Super Highway'. A causal relationship between the gaining of new knowledge and the promotion of wellness, which stems from the mental stimulation involved in learning new ICT skills, is well documented (Manheimer, Snodgrass and Moscow-McKenzie 1995; Scott 1999; Swindell & Vasella 1999; Foskey 2000; Millar & Falk 2000; Fraser 2002; Barnett & Adkins 2004). Researchers note that becoming computer and Internet literate is not only necessary to function in the new technology age, but is seen as a hedge against social isolation in later life.

ESTABLISHMENT OF ICT-LINKED POST-RETIREMENT NETWORKS

Kearns (2005, p.6) finds that the impact of ICT is creating new ways to build interactive networks and that a "diverse range of community and virtual learning partnerships have emerged in Australia and overseas." The importance of establishing new community networks to replace work-related ones is stressed by MacErlean (2005). These networks largely disappear with traditional 'cliff edge' retirement—at work today, at home for good tomorrow. Role change, which is discussed in Chapter 2 in relation to role theory (Rosow 1976), occurs when employees "switch from 35 hours or more work a week to zero on their 60th or 65th birthday" (MacErlean 2005, p.1). The Tasmanian Seniors Bureau (2005) notes that retirement at 65 years of age was a life-stage marker set in 1909 when the average male life expectancy was 58 years. Gergen and Gergen (2003) find that as one retires

from the workplace, one's personal worth becomes questionable, as one is sidelined, put out to pasture or considered a 'has been'. This view is confirmed by Warburton and Bartlett (2004), as they find that social networks tend to shrink as people age. They advocate helping others by volunteering, as a way to establish new support systems. The Tasmanian Seniors Bureau (2005, p.16) stresses the importance for "individuals to build a complex environment, providing mental stimulation beyond the world of work". New technologies are also opening up opportunities to join virtual e-mail networks and online learning groups for senior Australians and for those unable to access courses at the times or places on offer (Swindell & Vasella 1999; Brown 2000; Foskey 2000; Shepherd 2003; Kearns 2005).

Faris (2002) writes that as we move from resource-based to knowledge-based economies and societies, traditional economic core values are being challenged. Faris further suggests that:

the new global knowledge-based economy will demand a new model of lifelong learning in which electronic networking will play an increasingly important role in enabling globalization to become 'glocalization' (p.2).

ICT LITERACY: AN INTEGRAL PART OF CONTEMPORARY SOCIETY

Faris (2002, p.1) states that the three forms of traditional capital—land, labour, and financial—are now being "augmented by an understanding of the important role of human and social capital", as the intangible assets of a knowledge-based society. Nayak (2001) writes that participation in the information society actually involves adopting new perspectives, skills, knowledge, strategies and structures and this is principally an educational endeavour. Riley (2003, p.4) reinforces these views as he observes that as the world is rapidly moving towards information and "knowledge intensive societies", a change in the whole education system is essential to ensure a "wide base of knowledge workers who understand and use IT". McDonald and Denning (2002, p.2) report a growing interest among "academics, teachers, urban planners, politicians, community educationalists, entrepreneurs and others", in narrowing the digital divide by providing local communities with online access to the information society, the knowledge economy and the technological age.

Haddad (2000) editorialises that basic education for all in a modern world entails more than the conventional recipe. She asserts that for this goal to be achieved,

technology must be considered to be a necessity and not a luxury. Haddad joins with other researchers in her view that “the new economic and social challenges force us to think of basic education as a learning activity, anytime, anywhere, and for everyone”(p.7). “At every age” could well be added here, as lifelong or lifespan learning is implied. Chronological age is not seen to be as much a predictor of mental acuity as is attitude (Scott 1999; McKie 2000). Researchers generally agree that age is no bar to activity, even though older people might act a little more slowly than younger learners (Burns 1995; Jarvis 2001).

Lifelong learning in relation to third age men and women is the first of the themes that emerged from a literature review relating to third age learners accessing new technology (Hazzlewood 2001). The lifelong learning theme underlies the search of the research literature described in Chapter 2 about older men and women who, in active retirement, are coming to terms with a rapidly changing world, where new technology dominates every facet of living. The other emergent themes, which relate directly to the uptake of computer-based technology, are the significance of older adults’ attitude toward technology, gender and age learning differences, incentives for and barriers to the uptake of computer technology, and training and support implications for third age learners, their trainers, service providers, training course developers and policy makers. A summary of core papers from the literature review, which followed a research study of seniors online (Kilpatrick & Hazzlewood 2001), is attached as Appendix A. Four typologies identified in the seniors online study, window shoppers, e-mailers, searchers and e-seniors, are discussed in more detail in Chapter 3. These themes and typologies form the scaffolding of the research and therefore of the thesis itself.

Although the ICT training and support theme is the primary focus of this thesis, the other themes inform each part of the research as it concentrates on the theoretical, practical and policy issues confronting older adults, who are acquiring new knowledge and learning new skills in a technological age by choice or necessity. Redding, Eisenman and Rugolo (1998, p.1) set the scene as they report that many older adults are “deciding or being forced to use a computer for the first time”, ostensibly to equip them for lives longer than their parents enjoyed or expected.

This cohort of adults over the age of 50 not only contains a large proportion of the population, but it also spans a wide age range, as promotion of positive ageing and its accompanying idea of wellness rather than illness lengthens the active period of retirement and shrinks the fourth age of dependence and inactivity. The uptake of ICT in the third age is claimed to promote healthy ageing and postpone the entry into the age marked by frailty and decline. Third age older adults, who Gergen and Gergen (2003) claim have emerged at last from the 'dark age', are increasingly the subject of theorists, researchers, policy makers and practitioners.

This current research project is timely, in that it examines the availability, affordability and appropriateness of ICT training and support for older adult third age learners and identifies implications for stakeholders and gatekeepers. Men and women of retirement age will be needed to fill employment gaps, albeit in a part time capacity, as the 'baby bust' depletes the second age workforce. Other third age learners, who apply their new ICT skills in the non-government organisation volunteer sector, contribute significantly to community social capital with benefits accruing to individuals, families, friends and the wider community.

CHANGE AND CHOICE, TRENDS AND MEGATRENDS

It's not the strongest of the species who survive, nor the most intelligent, but the ones most responsive to change.
(Darwin 1859)

As is shown in the literature review in Chapter 2, the words 'change' and 'choice' permeate the literature about older adults and new technology. The exceptional extent and rapid pace of change, as forecast by Faure (1972), has become a global reality in the late 20th and early 21st centuries and is featured in much of the current and recent literature. Nasseh (1998, p.12) comments that "the penetration of technology in life, work, and social interaction has changed the traditional assumptions and operation of societies" at both national and global levels. This saturation of technology is also argued by Manheimer (2000), Adler (2002) and West (2003b). Faris (2001, p.2) suggests that there are three contemporary, inter-related drivers of change in an emerging knowledge-based society—globalisation, the rapidly increasing pace of technological change sparked by research and innovation, and the advance of new science, technology knowledge and learning. Kearns (2005, p.3) nominates six key

drivers that impact on Australian society and make learning for all throughout life an imperative. These drivers, which are of particular relevance to this study, are:

- globalisation;
- the knowledge economy;
- demography (which Kearns sees as especially important);
- technology;
- changes in work and labour markets; and
- sustaining communities.

Colwell (2000) believes that information technology (IT) can guide us to new frontiers in fundamental research and draw different disciplines together. She writes that “IT can integrate research and education and most of all, it can link science and society in ways we never imagined” (p.15). Adding the ‘c’ of communication to information technology (ICT), Johnston (2001) stresses that it is how the technologies work together that matters. Faris (2004, p.1) contends that the explosion of new knowledge and learning is transforming the world we live in and is the result of “skilled intelligence that is the stem cell of an emerging knowledge-based economy and society”. Adler (2002), on the other hand, looks at the bigger picture as he identifies what he believes to be the two mega-trends that are driving American society in the early years of the 21st century. These trends are the technology wave, which Toffler (1980) alludes to as the third wave where the introduction of computers and the Internet have changed daily lives markedly, and the age wave. The term ‘age wave’ was coined by Americans Ken and Maddie Dychtwald in 1986 (Dychtwald & Flower 1989) and describes the continuing ageing of the population as creating an unprecedented set of challenges and opportunities. Hurworth and Crombie (1995) foreshadow this as they comment on the need for positive new thinking, policies and programs in response to the age wave. They refer to many of the myths about older non-working people as a ‘cultural lag’, deriving from the time when people moved straight from Laslett’s (1989) second age of employment and parenting to a comparatively short fourth age of decline and decrepitude.

Stretton (2000) chairs a UK government ageing-population panel that concludes that changes caused by population ageing can be anticipated and that behaviour can be adapted to avoid potential problems. The panel states simply that people are living

longer and birth rates are falling in what it describes as the 'age shift'. An implication of this is that while more people are now living healthier lives and entering retirement with higher education levels (Chan 2002), the sheer numbers living longer mean that eventually there will be a great many more frail aged people in the fourth age. Davis (2003) refers to the greying of society; Kleiman (1997), Horst (1999), Geddes (2002), Chan (2002) and Klatz (2004) dub the phenomenon global greying. It would appear that age tsunami would be a more appropriate way to refer to the predicted greying of the world. Edwards (1997, p.60) notes that what had been thought of as a "demographic time bomb" in the 1980s and into the 1990s, with its attendant fear of economic insecurity, has largely been replaced by a concern about how to support an ageing population. Chan (2002) issues a global warning as she equates global greying with monetary instability, the information revolution and climate change.

McConnell (2004) uses a similarly concerning analogy describing this population eruption as an agequake, which also has within it the elements of 'be afraid' doom and gloom ageism stereotypes. Disney (2002, p.1) sounds a warning as he writes:

In some ways globalisation is like a river. It can bring substantial economic and social and environmental nourishment to those who are in a position to benefit from it. But like a river, it can erode and devastate and overwhelm if it rushes too fast or spreads too far.

Disney expands this view as he writes that economic and technical globalisation has outpaced appropriate systems of international governance. Change is a process of learning according to Falk, Sefton and Billett (1999, p.v) who argue that "if we are looking for a way to change the culture, we should rely heavily on research". They advocate this quality-assured process not only for industry, but also for any organisation or for society itself. Adler (2002) links this focus on research to life course planning throughout the third age where, he states, research is crucial.

Redding, Eisenman and Rugolo (1998) see a direct relationship between intentional learning and external societal or internal personal change, both of which occur with ageing and trigger motivation to learn new skills. The rapidity of change and the resulting new learning needs, which are brought about by the reality of the nature of new technology, have been described in the literature as 'pervasive' by countless researchers including Candy (2000, 2004), Foskey (2002), ANTA (2003), Gergen and

Gergen (2003), West (2003a) and Barnett and Adkins (2004). Cornford (2000) relates the advent of computerisation to the enormous technological change over the past two decades where, he writes, “industrially advanced societies have been subjected to the maelstrom of technological, economic and social revolutions” (p.2).

Recommendation 19 from the UK National Committee of Inquiry into Higher Education Dearing Report (1997) states that the world of work is in continual change and that individuals will increasingly need to develop new capabilities and manage their own development and learning throughout life. Participation in new environments brought about by these changes gives rise to ever more complex literacy practices (Lo Bianco & Freebody 2001). As a result, individuals must acquire, develop and improve their literacy skills throughout life in response to changes in society: at home, in the workplace and in the broader community.

Jarvis (2001) argues that while older people have certain choices in this rapidly changing society, they do not always have the freedom of choice, “sometimes having experiences they would rather not have” (p.34). Nelson (2004) agrees with this argument and goes further as he suggests that our biggest challenge is how we manage that which we fear most as human beings. These fears relate to change, and people and ideas that we do not always understand or perhaps want.

Redding, Eisenman and Rugolo (1998), in discussing self-directed learning, note the gradually occurring developmental changes that affect the way adults think about themselves and the world around them. They suggest that in learning to use a computer in later life, both the desire and the decision to respond to change can also occur over an extended period. Whitehead (1929) pointed out that education could be defined as a process of transmitting what is known only when “the time span of major cultural change is greater than the life-span of an individual”. The shrinking time-spans of technological cultural changes in the late 20th and the early 21st centuries could not be further from the gentle leisurely changes of Whitehead’s day. McKie (2000) links technophobia in part with the inability to keep pace with digital development but also suggests that although both learning and enjoyment can stem from association with computer applications, there may be some fear of change not necessarily associated with age.

Kirkwood (2001) states that the freedom of older adults to make and continue making choices is perhaps the greatest single index of well-being. Kirkwood considers that choice matters in ageing for two very powerful reasons:

- First, although many fruits of the scientific revolution lie in the future, scientific understanding of the ageing process tells us already that there is a great deal we can do now by making the right choices; and
- Second, as we get older, choice often seems to be taken away. The infirmity of age undoubtedly sets barriers to certain kinds of choice, while financial hardship, an all-too-common companion of old age, sets others (p.1).

Kirkwood's concern is that "choice tends to be limited by age much more than is really necessary, either through negative expectations or just poor planning". Delors (1996, p.9), in referring to education systems in general, grounds the argument with the statement that "all the choices made should be predicated upon the principle of equal opportunity".

The literature discussed in this section clearly suggests that today's older adults will have to adapt to more and more changes, and that ICT skills will be crucial to negotiate these changes. There are implications for policy makers in that changes are occurring at a faster rate than the provision of training and support linked to the needs of an ageing population. The next section addresses myths and stereotypes that suggest that older adults struggle to learn new skills.

MYTHS AND STEREOTYPES ABOUT AGEING

Ageism, like racism and sexism, creates its own self-prophecies and promotes lifestyles that damage individual potential. It is a cumulating process: the older people get, the more inferior they are assumed to become, and the more difficult it is for them to swim against the tide that can so easily swamp them. (Job 1984)

There is a body of anecdotal and recorded evidence about the invisibility and reduced worth of older adults in the community, which is gathered together under the heading of 'ageism'. Foskey (2002, p.1) presents a consensus view as she claims that "one of the most pervasive, yet often unacknowledged forms of discrimination in our society, likely to affect most of us at some point in our lives, is ageism".

Marshall (1986) and Glanz (1997) reflect Rosow's (1976) promulgation of the role theory, which is drawn from sociology's modernisation and detachment theories.

Marshall writes of the early attempts to link macro and micro theory. He comments that the debate between activity theory (Havighurst 1963) and disengagement theory (Cumming & Henry 1961), resulting in role theory claims that the modernisation of society is alleged to deprive older people of meaningful society roles. The loss of roles and status as people age, such as at demarcation retirement mentioned earlier, or due to changed family circumstances, can exclude them from significant social participation and devalues them. Role theory is one of a number of theories of ageing, which is discussed in detail in Chapter 3.

Much of the research in the last three decades to 2005 has stressed the need to counter the loss of systematic role transition and status by an entire cohort and has resulted in the development of such learning environments as the University of the Third Age (U3A) and, since the mid 1990s, actual and virtual computer networks for seniors. The loss of status by the elderly is not new as it is noted by Walden (1992), who initiated Launceston's School for Seniors, a U3A equivalent. Walden quotes Comfort (1977, p.35), who writes that ageism promotes "the notion that people cease to be people, cease to be the same people or become people of a distinct and inferior kind, simply by virtue of having lived a specified number of years".

Campbell-Smith (1997, p.99) confirms this ageism perception, observing that "the dominant discourse is that older people are lesser people and all too often considered useless". Narushima (2000, p.1) dubs this perception the Grandpa Simpson syndrome, "where older people are portrayed, like the cartoon character, as incontinent and liable to walk into walls in their old folks' homes". Sidotti (1999, p.48) echoes this view as he writes that ageism is "all pervasive in our society . . . elderly people are expected to be muddled or confused". McConnell (2004) qualifies these stereotypical comments, as he generalises that the young regard older people as 'fuddy-duddies who've had a humour bypass', but that, on the other hand, many old people stereotype and even demonise the young. A view based on recent national statistics (Tasmanian Seniors Bureau 2005) refutes the myth that older people are ill, poor and dependent, reporting that "people over 55 years of age . . . have higher levels of satisfaction (happiness) than younger age groups". UN Secretary General Annan (1998), introducing the 1999 International Year of the Older Person, chooses a middle way as he declares:

A society for all ages is multi-generational. It is not fragmented, with youths, adults and older persons going their separate ways, rather it is age-inclusive, with different generations recognising and acting upon their commonality of interests.

A United Nations (UN 2000) World Population Ageing Wall Chart amplifies this declaration as it includes rural and city dwellers, public and private sector identities, families and individuals, old and young alike. It states that it is “critical that societies adjust to this human paradigm as record numbers of people live into very old age, if we are to move towards a society for all ages”. Alvarez (1998) points out that the UN Charter does not stipulate retirement at 60.

Throssell (2004) also considers society as age inclusive in his study of people who conduct their lives in ways that are not chronologically age stereotypical in relation to the culture they live in. He remarks that these people are sometimes referred to as possessing agelessness, an attribute that enables them to choose lifelong learning options as these present themselves. Another perspective on ageing is offered by Alvarez (1998, p.4) who writes that “ageing is about life, not just the continuation of life statistically, or painlessly, but life as an ongoing endeavour, engaging change, solving new problems, growing, learning, creating and sharing”.

While Glanz (1997) contends that enrolment and participation in formal or informal education grants an older person the social status of ‘student’, both in his own eyes and in the view of society, Manheimer, Snodgrass and Moscow-McKenzie (1995, p.27) draw attention to an Arabian proverb inscribed on the wall of a North Carolina, US, education building – “Learning in old age is writing on sand, but learning in youth is engraving on stone”. Findsen (2001) reinforces this ageism view as he reports that a frequently asked question is what older adults need education for—the inference being that this is a wasteful activity. Jarvis (2001, p.110) adds to this argument, as he warns that “elder learning if not relevant or useful to contemporary society will result in not only rejection of learned experience, but of the elderly themselves”. Jarvis also comments about the importance of differentiating between the person and the person’s usefulness to society. The damaging effects of ageism are countered by a society beginning to respond to the notion of an age inclusive population. The concept of positive ageing challenges stereotypical views of older people as burdens on society.

POSITIVE AGEING

Campbell-Smith (1997, p.101), herself a third age learner and positive ageing advocate, is confident that “older people can stop clinging to the past, adapt to the present and live in the future”. Campbell-Smith believes that the choice between boredom and frenetic activity is the responsibility of the individual, while Beddie (2002, p.5) suggests that “older people too, need sometimes to be encouraged to change their attitudes”. Manheimer (2000) puts forward the idea that generational shifts in attitude about longevity, leisure and quality of work, occur as retirement undergoes dramatic changes influenced by public and private sector policies. Negative and unfounded concepts become self-fulfilling prophecies as the time-worn jokes about old dogs and new tricks drain confidence in managing the constant changes and meeting the new challenges of new technologies, “which tend to be associated with youth and youth culture” (Williamson, Bow & Wale 1997, p.1). Barnett and Adkins (2004, p1) reinforce this bias as they examine older “adults’ struggle in the field of information technology that is dominated by the orthodoxy of young experts” while Paul & Stegbauer (2005) contend that producers of electronic devices widely neglect the needs of the elderly, whom they regard as a marginal group. Scott (1999) prefers ‘old dogs—new clicks’, as she observes that older adults are neither technophobes nor passive dependents but are rather uninformed consumers. Knowles (1991, p.153) comments that at significant life stages “some of the most meaningful learning may occur, when an older dog may learn some tricks better than younger dogs who have yet to be confronted with some of the critical events of life”. Gergen and Gergen (2003) contend that positive public programs are needed to counteract the presence of pervasive negative stereotypes.

NEW TECHNOLOGY LEARNING FOR OLDER ADULTS

Edwards (1997) suggests that economic, cultural, technological and demographic forms of change in the contemporary world have produced a lifelong learning discourse that supports the need to become a learning society closely linked with economic competitiveness. Edwards describes this discourse of change as one that “supports an interest in lifelong learning . . . to meet the needs of employers and individuals active in the labour market—waged and unwaged” (p.63). Withnall (2000b) considers Edwards’ analysis of change in an uncertain world, perceptive. She observes that older people are largely marginalised by the “continued emphasis on

economic competitiveness in tandem with moral panics about the ageing population” (p.289).

The discussion to date confirms the importance of learning to use ICT for today’s third age cohort. This research explores issues of an ageing population and the impending imbalance in the workplace resulting in older adults needing to postpone their retirement and making the acquisition of ICT literacy socially responsible. The increased life expectancy of both men and women adds weight to this argument as older adults volunteering in the community in retirement, use new technology knowledge and skills not gained when in the paid workplace. The ever-changing nature of new technology reinforces the need for research into new learning approaches to enable those who have not grown up with technology to keep pace with an increasingly complex knowledge society. The research questions reflect this concern.

THE RESEARCH QUESTIONS

The research questions addressed in this thesis were developed from earlier research (Kilpatrick & Hazzlewood 2001) and a literature review (Hazzlewood 2001):

- 1 *What are the issues relating to adult learning in the third age of active retirement in the technological age?***
- 2 *How do older men and women learn to use computers and access the Internet?***
- 3 *What are the incentives for and the barriers to, learning about and via new technology in later life?***
- 4 *What are the ICT training and support implications for older adult learners, trainers, service providers, researchers and policy makers?***
- 5 *How do the skills, knowledge and information gained from accessing computer technology, add to community social capital?***

A qualitative design has been chosen to study a sample of older northern Tasmanian adults, whose ages range from the early 50s to the late 90s. The methodologies used to answer these research questions are the subject of Chapter 3.

CONCLUSION

In this chapter, the background to the research project is outlined and some of the issues affecting older adults who are learning to use computer-based technology are discussed. The burgeoning third age and its relationship with the baby boom and the subsequent baby bust and the projected workplace imbalance are described. The implications of the demographics of an ageing population are referred to and the significance of this study for a range of individual, community and government stakeholders is portrayed. The need for older adults to cope with constant multiple changes in the technological age is contrasted with the changes experienced in earlier ages, when these occurred almost imperceptibly over several generations.

The importance of instigating choice is stressed at all levels of formal and informal learning throughout the lifespan, but particularly in this study, in relation to the new learning needed for the transfer of adult learning skills to computer-based technology. It is not questioned that older adults have little choice but to continually learn new skills to keep up with the irreversible technological changes and to avoid being marginalised in a youth-skewed society.

Examples of myths and stereotypes of ageing that form part of the psyche of both active and involved, and inactive and socially isolated, older adults are given. Older adults are shown to be victims of negative ageism myths that have become part of much second age policy and wider societal thinking and are adopted as self-fulfilling prophecies by some older people. The concept of agelessness (Throssell 2004) is suggested as a counter to limiting chronological age stereotypes. The themes and typologies that inform this research are outlined and the research questions, which were developed as the focus was narrowed, are listed. The next chapter, Chapter 2 is a review of literature that is directly related to the background and the outline of the thesis and to the aim and the significance of the study as it seeks answers from a range of sources, to the research questions posed.

CHAPTER TWO: REVIEW OF THE LITERATURE

INTRODUCTION

This chapter reviews hard copy and online seminal and recent journal articles and monographs, conference papers and government policy documents. Extensive use is made of the Internet as a document source in keeping with the title of the thesis. Following an introductory discussion linking adult learning theory, research, policy and practice, an overview of theories of ageing is given. There is a special focus on adult education theories and practices that have been transferred to the new learning needed by older adults to enable them to access ICT. The remainder of the chapter is divided into sections, which correlate broadly with the research questions.

THEORY, RESEARCH, POLICY AND PRACTICE

Theory put into practice, informing research and generating theory, has been a well trodden path writes Field (2000, p.10), who suggests that “historically, the lines of communication between investigators and practitioners in our [lifelong learning] field are relatively short and uncluttered”. Field adds that as the interest in the adult education sector grows and its boundaries are blurred, “we may need to look for ways of renewing and strengthening dialogue between research and practice”. Findsen (2005) also advocates a better integration of theory and practice in educational gerontology and an exploration of links with the concept of lifelong learning.

Mezirow (1991, p.xi) on the other hand, comments that “a disturbing fault line separates theories of adult learning from the practice of those who try to help adults learn”. It is arguable that Mezirow today would consider this fault line to be a digital divide. A researcher who does not believe that there should be a divide between theory and practice is Jarvis (2001, p.xiv), who asserts that “indeed practice should, and does, often precede theory”.

The vital two-way link between the ivory tower and the coalface, or as Kilpatrick (2003) writes, the ivory tower and reality, is not always recognised, acknowledged or even present. This comment may relate more to lack of coordination of research and perhaps a need for a clearinghouse. Research into learning, however, that matches the special needs of older adults, holds both theoretical and practical implications for training as King (1997) and Mott (2000) attest, the cyclic nature of which is reflected in this study.

Another perspective is offered by Glanz (1997, p.2), who reflects that:

the history of the relationship between computers and older persons is relatively short, but no one person can lay claim to encompassing the entire phenomenon . . . the real truth is that academics tend to work at a much slower pace than the “real world” operates and that we simply have not caught up with the accelerating pace of social change.

Falk, Sefton and Billett (1999) do not support this line of reasoning as they argue that if we are looking for the answer to the question “how to change the training culture within an industry, in any organisation or for society”, the answer should rely heavily on research”. Bassey (2000, p.14) offers a UK view that “one way forward is to distinguish between ‘big’ research and practitioner research”. Bassey explains that the former is the search for general statements where originality is prized but context is not, while the latter is the application of ‘big’ ideas in local contexts. The argument is that these two forms of educational research imply a fundamental notion that mediates research ideas with places of learning—schools, colleges, universities and workplaces. Coghlan and Brannick (2001, p.3) acknowledge the linking of research and practice by Gummeson (2000), as he sees both groups as knowledge workers who mutually peck at and contribute to each others’ disciplines.

Some theories of ageing, which are relevant to this study of ICT learning by older adults, are discussed in the next section. The development of these theories spans more than half a century from the 1950s to the present day and a number of disciplines are drawn on in the discussion, including anthropology, sociology, psychology and social gerontology.

THEORIES ON AGEING

There is no single measure or specific point on a scale that separates the ‘literate’ from the ‘illiterate’. (Wickert 1989, p.17)

Borrowing from Wickert’s pronouncement about there being a number of adult literacies, I argue that there is no one ageing theory that fits the diverse cohort of third age learners. Several theories are reviewed and described according to their relevance to this study of older adults and ICT uptake. Bright (1989, pp.50–60) links adult education and psychology in his reference to both good and bad eclecticism. As the eyes are picked out of epistemological or ‘ground of knowledge’ in cafeteria style, a

balance is suggested between the extremes of choosing parts of many paradigms and the 'tunnel vision' concentration on a single theory. Knowles (1991, p.110) warns that "if you are not clear about what your theory is, or even whether you have one, the chances are that you will end up with a hodgepodge". An example of such 'cherry picking' is provided by Arley-Smith (2004), an American practitioner teaching older adult ICT learners. He encourages trainers to mix and match teaching methods as appropriate. On the other hand, an example of the danger of indiscriminate cafeteria eclecticism is given by Slattery (2005). Gardner (1993) decries the recent misinterpretation and mixing of his multiple intelligence hypothesis with other teaching methods in order to popularise accelerated learning in schools in New South Wales, Australia. According to Slattery, Gardner's recent criticisms were instrumental in the cancellation of what Gardner called a 'mishmash of practices', combined to produce a well-intentioned but fatally flawed educational program.

Age stratification theory (Cockerham 1991) employs chronological age as a delineator. While this is a convenient marker for policymakers, it is one of the theories that Williamson (1995) suggests contributes to the generalisation that older adults are an homogeneous group. Laslett's (1989) third age life-stage categorisation over-rides older age compartmentalisation where the epithets old, aged, elderly or seniors tend to compress people with different characteristics into a single category. Williamson (1995) shares this view as she comments that generalisations of this nature are often followed by negative stereotyping. Throssell (2004), in his research into agelessness, adds another dimension as he posits that cultural perceptions relative to chronological age could limit involvement in learning throughout life.

Disengagement theory (Cumming & Henry 1961) describes the gradual withdrawal by older adults from society. Adelman (1994) comments on the negative association between disengagement theory and its extension role change theory (Rosow 1976), which is discussed below. Disengagement from society resulting in isolation is seen as a risk factor for cognitive impairment among elderly persons, however, Bors, Altpeter, Luken and Butler (2004) consider it a myth that older people disengage from society as a natural stage of ageing. With reference to the uptake of ICT by third age learners, it is necessary to distinguish between passive disengaged and active non-engaged older adults. The former, often geographically or socially isolated, are

vaguely aware but lack information about accessible training and support options, while the latter have both the information and the opportunity to embrace ICT, but consciously reject new technology or they may simply choose to defer this due to a number of reasons including time constraints or perceived lack of current need.

Smith (2005) cites McGivney (1993, p.17) as commenting that a common finding in participation research is that non-participants have little or no knowledge of available opportunities. Smith (2005, p.7) suggests that a lack of information available to adults who are disengaged from, or not engaged in, learning should be added as a barrier to the overlapping and inter-connected “situational, institutional and dispositional” factors. The provision of accurate, timely and appropriate information is stressed by researchers to be important in encouraging continued social engagement. Maintaining social connections and participation in a range of physical exercise and mentally stimulating activities in later life, is thought to arrest cognitive decline (Bassuk, Glass & Berkman 1999; Swindell & Vasella 1999; Quigley 2004).

Activity theory (Havighurst 1963) states that adults will maintain levels of activity into old age. Adelman (1994) finds that activity theory and role enhancement theory, with the resultant multiple role involvement in late life, is linked to greater psychological well-being. Adelman lists multiple roles in later life as paid worker, spouse, parent, volunteer, homemaker, grandparent, caregiver or student, as do Warburton and Bartlett (2004, p.3), who also acknowledge the contribution to society of older people who include volunteer service among their multiple retirement roles. Williamson (1995, p.54) notes that although the generalisation of homogeneity is implicit in applying activity theory to older adults, it does have a more positive connotation than age stratification theory. Withnall (2006, p.2) notes the persuasive influence of activity theory on current provision of educational opportunities for older people and warns that we should consider “shifting the focus of debate away from policy maker and practitioner perspectives and ensure that the voices of older learners themselves are heard”.

The socio-psychological continuity theory, which emerged from the work of early social gerontologists such as Havighurst, Neugarten and Tobin (1968) and Atchley (1972), states that personal characteristics, values and behaviours are consolidated in successive individual-centric stages of the life span. This reinforces the diversity

rather than the similarity between people as they age. Continuity theory, which can be seen in the application of ICT by many older adults to post-retirement activities, is based on the premise that core basic personality characteristics, which often become apparent at an early age (Withnall 2006) are retained into old age, but become more pronounced as experience accumulates to match the growing complexity of the personally specific learning required. This new learning encompasses the wide range of knowledge and skills required for involvement by older adults in the personal micro-, the local group meso- and the wider society macro-community levels.

Three decades ago, before the advent of ICT for all, Rosow (1976) generalised that, as a cohort, older adults in retirement in a contemporary, global-industrial society occupy a role-less position. The fundamental argument of role theory is that, as people age, they are less well integrated with the structures of society and so experience role loss and subsequent decline in morale and life satisfaction. Building on role theory, it is hypothesised that multiple role involvement in later life is a predictor of psychological well-being (Hong & Seltzer 1995; Reid & Hardy 1999).

Tomstan (2005) reflects current thinking in that the disengagement and activity theories may well be out of step with contemporary society. Tomstan offers an existential positive ageing theory, which he calls gerontranscendence. He suggests that the individual in retirement is less interested in self and in material possessions, more selective in choosing meaningful social activities. The participants in this study belong to the third age—an age of active retirement—who therefore choose meaningful participation in peer social activities to enhance the time they have free after fulfilling regular or occasional enjoyable though time-consuming inter-generational family commitments. Social interaction making meaning of post-retirement identity includes a return to formal study and both general membership and ICT and non ICT-linked volunteer service in sporting clubs, church groups and a variety of NGOs and is exemplified in the stories of the sample participants reported in Chapters 4 and 5. Tomstan (2005) finds that a feature of positive ageing is a close affinity with the past and this is borne out in this study as genealogy sessions are the most popular of all classes as older men and women access the Internet to trace their family trees and produce family histories to hand on to their children and grandchildren. He stresses that the gerontranscendence theory replaces rather than

re-invents the “old dualism” of activity and disengagement. It can be argued that no theory of ageing can be entirely rejected due to the extraordinary diversity of the third age cohort. Both activity and continuity theories, for example, can be seen to apply to self-directed third age learners, who exhibit a high locus of control as they cope with externally generated role changes. These changes may be gradual, anticipated and prepared for, or sudden and dramatic as in unexpected retirement from the workplace (MacErlean 2005) referred to in Chapter 1.

Four corner stones of lifelong learning, theory, research, policy and practice, are equally important in relation to ICT learning in later life. There is a strong argument for a pro-active approach from occupiers of each corner towards the other three to provide a concerted and coordinated program to help older adults to gain ICT literacy proficiency. The theories of ageing presented above are as diverse as the members of the cohort they seek to describe. The implications for third age ICT learners, trainers and training providers lie in the need for an awareness of this dual diversity and the synergies that exist to foster the uptake of ICT in retirement. The remainder of this chapter reviews literature relating to each of the research questions.

RESEARCH QUESTION 1

What are the issues relating to adult learning in the third age of active retirement in the technological age?

INTRODUCTION

This section explores the development of adult learning theory within the life span of the current third age adult cohort. The concept of lifelong learning from its genesis early in the twentieth century is discussed. This leads to the consideration of some of the implications of learning in later life and, in particular, learning to access and use ICT in retirement. Early and later adopters of ICT are delineated and parallels are drawn between the acquisition of a second or subsequent language by older migrants and the gaining of computer and Internet literacy in adulthood. Cognitive ageing issues are discussed as they affect new technology learning, myths about learning and the ageing brain and advances in neuroscience are mentioned. Some early childhood experiences and the possibility of their affecting learning in later life, as well as the importance of continuing lifespan mental stimulation, are examined in the light of longer life learning needs and opportunities.

ADULT EDUCATION TO ADULT LEARNING

Subtle kaleidoscopic semantic changes of focus from adult education to the education of adults (Knowles 1991), to adult learning, have occurred in the latter half of the twentieth century as seminal writers theorise about learning in adulthood. Gelpi (1985) links lifelong education with international understanding, and commends the use of the term to educational planners. Smith notes a shift in much of the literature and policy discussion from lifelong education to lifelong learning. Holmes (1998) observes that whereas a little more than two decades previously discussions would be about education and training, such discussions now tend to be framed in terms of learning. Boshier (2001) regrets the tendency for scholars and political analysts to consider lifelong learning and lifelong education as synonymous. Coffield (1999), in reviewing the impact of research on policy-making in the UK, claims that the learning society is a form of social control while Jarvis (2001) appears to imply a full circle shift in emphasis as he asks if we actually live in a learning society, or an educative one. Jarvis remarks that this is not a matter of semantics but rather “a major question about the control of the individual’s learning and about how lifelong education is being defined for the next generation” (ibid. p.195). He questions the rationale behind the vision of the learning society outlined in the policy documents where everybody is expected to be a lifelong learner, with the responsibility placed on the individual ‘apparently autonomous learner’ to learn, grow and develop. Jarvis (2001, p.195) sees the primary economic rationalist purpose of government policy makers as the provision of a workforce to compete in the global economy, with the enrichment of the population added almost as an afterthought.

An Australian Government policy speech on lifelong learning (Nelson 2005) mentions a range of stakeholders, but not adult learners, or even older adults. Descriptive terms used by researchers and practitioners to qualify third age lifelong learning include learning across the lifespan, learning in later life, learning in retirement, third age learning, through life learning, longer life learning, continuing learning and the more recently coined ‘lifewide’ learning (Jarvis 2001; Faris 2002). The French term ‘education permanente’, which spawned the university of the third age (U3A) concept in the 1970s, epitomises the lifelong learning concept in its broadest sense, as it encompasses voluntary formal, informal, non-formal, incidental, accidental and serendipitous learning.

LIFELONG LEARNING

The concept of lifelong learning is not new as it dates back to Plato and references in modern times appeared early in the last century. The Adult Education Committee of the British Ministry of Reconstruction (1919, p.55) states, in a report that could be mistaken for a contemporaneous policy document, that adult education “must not be regarded as a luxury for a few exceptional persons”. This report, which pre-dates Haddad’s (2000 p.6) plea, that “technological age ICT is a necessity rather than a luxury”, by almost a century. The 1919 report concludes that adult education is a “permanent national necessity, an inseparable aspect of citizenship, and therefore should be both universal and lifelong” (p.55).

Among the adult educators of the day, who were members of the government committee, Eduard Lindman and Basil Yeaxlee, who wrote long treatises in 1926 and 1929 respectively, were staunch advocates of lifelong learning along with their colleague John Dewey. The lifelong learning concept was also aired by Alfred North Whitehead, who is cited in Knowles (1991). Whitehead (1929, pp.viii–xix) proposed that rather than the knowledge acquired in youth lasting a lifetime, an era was beginning when education must be re-defined as a “lifelong process of continuing enquiry”. Seven decades later Jarvis (2001, p.10) writes that “learning has become associated with something that is lifelong”.

The Dearing Report (1997) states that continuing education has been displaced by lifelong learning and that debate on further and higher education since then is based on the notion of a learning society. Brown (2000, p.1) identifies the decade of the nineteen sixties and the early nineteen seventies as the period when recognition was given by UNESCO to the lifelong learning concept, where greater equity in educational opportunity is seen as a major levelling force in society. Brown calls this “democratisation through education”, suggesting that lifelong learning equity is based in the humanistic tradition. Nearly a decade separates two of the UNESCO-sponsored reports on lifelong learning, the 1996 Delors Report and the 2004 Abid Report. The 1996 report calls for a broad concept of education which is pursued throughout life and embodies flexibility, diversity and availability when and where it is required. The 2004 report heralds the arrival of information literacy, which is concerned with not only all aspects of new technology, but also the need to ask why, when and how to use

this and, in addition to be able to think critically about the information available.

Abid (2004) documents the framework of the United Nations Literacy Decade (2003-2012), within which the new Information Literacy Programme of UNESCO was launched during the 2004-2005 biennium. The general objectives are to:

- Foster the development of an information literate citizenry with the technical and critical thinking skills and abilities needed to identify, acquire, manage and use information to enrich all aspects of their work and personal lives.
- Identify and encourage effective practices in information literacy around the world
- Promote information literacy through regional approaches and to facilitate exchanges
- Propose innovative curricula about information literacy
- Improve co-operation between government officials, researchers, educators, librarians and media practitioners

This represents a continuing commitment by UN instrumentalities to foster lifelong learning into the foreseeable future. Paradoxically, digital media – and particularly the Internet – significantly increase the potential for active participation; but they also create an environment of bewildering choices.

Tight (1998, p.115) contends that the notion of lifelong learning, whether viewed as process or product, is a truism; that “so long as we are living, we cannot help learning”. Cornford (2000, p.10) declares that lifelong learning has become “the catch-cry of the new millennium and is a major issue on account of continuing technological and social change and the need for maintenance of skill and knowledge currency”. Cornford cites Wurzburg (1998) who likens the three conditions he considers necessary to support lifelong learning to a three-legged stool. Wurzburg suggests that these three legs are a good education, a community that values continuing learning, and employers who encourage further learning. The last of these suggestions includes both paid and volunteer employment and is reinforced by the findings of a national marketing strategy survey conducted by the Australian National Training Authority (ANTA 2000). ANTA finds that most Australians value learning and that opportunities to learn and encouragement to overcome disincentives are important factors in obtaining successful personal, community and wider societal outcomes. A key finding from a recent study by Kearns (2005, p.iii) is that lifelong learning is poorly understood in Australia. Kearns alleges that this “acts as a barrier

to concerted partnership action by all stakeholders in progressing opportunities for learning throughout life for all Australians”. He cautions that more comprehensive and coherent policies are needed to support learning throughout life in many contexts.

A viewpoint from both sides of Australian politics is germane to the lifelong learning topic. The then Federal Opposition Leader Latham (2000) identifies education as the emerging top priority for Australian public policy, albeit with a long way to go to improve the quality of the education system. Latham takes a bold stand, declaring that the main task is to develop a new culture of lifelong learning in Australia. He perhaps goes out on a limb as he further suggests that education should replace sport as our national pastime. Latham compares Australia unfavourably with Singapore where, he states, education is highly valued and all sections of the community are expected to contribute to it. The Federal Education, Science and Training minister Nelson (2003) states that the most significant thing that informs his vision for education is the finding and achieving of human potential. He reflects on Socrates’ 400 BC writings stating that we have a mutual need for social interaction and that a defining factor in learning is the diversity of aptitude. The implication Nelson (2003) gleans from Socrates is that we are all different, we are all good at something and the challenge of mankind is to find out to what it is that each of us is best suited.

Latham (2000) contends that time has become the chief enemy of lifelong learning, making education look less relevant and more threatening and unable to meet the public’s demand for flexibility and easy access. He states that for most Australians, educational opportunities fade away as they move further into the adult years and that learning loses out to the demands of work, family and social life. Candy (2000 p.1) writes that the amount of new information, the complexity of systems, and the range of new technologies all require continuous updating and new learning. He adds that no one is exempt from these pressures and that “from the oldest to the youngest, from the city to the bush, in every walk of life, people have to become lifelong learners simply to survive, much less to advance”. Candy further contends that with the increasing impact of globalisation, “Australia can’t afford to ignore such a significant international movement”. He continues that it seems inevitable that if we want to be a prosperous, competitive, economically viable and socially inclusive society, we need to pay more attention to providing greater opportunities for everyone to learn,

“irrespective of who they are, where they live, what they do, or their previous educational attainments”.

LEARNING IN LATER LIFE

While Knowles (1991) states that adults have a deep psychological need to be self-directing, Redding, Eisenman and Rugolo (1998) contend that learning occurs most often as a result of external societal, or internal personal factors as needs and interests change with ageing. These almost imperceptible changes are referred to as the invisible outcomes in learners' lives by Bingman (2000, p.2), who includes in these outcomes “changes in what people are able to do in their lives as a result of new skills or credentials, as well as changes in their sense of self”. Falk, Golding and Balatti (2000) refer to the various levels of ‘invisible benefits’ of adult community education, which accrue to older learners and spread to the wider community. Withnall (2000a, p.87) identifies the new millennium as “an appropriate time to re-visit the debate about purpose in the education and training of older people”. Glendenning (2000) declares that rather than focusing on older adult education, “there is the need for a new paradigm for lifelong learning itself, which would place ageing at the centre of the debate”. As more older adults become computer literate, the stereotypes about old dogs not being able to learn new tricks have less substance as Williamson, Bow and Wale (1997), Scott (1999) and Jarvis (2001) refute these ageism myths.

LEARNING ICT IN RETIREMENT

McKie (2000, p.276) asks if lifelong learning holds the key to adult viability in a technological world. She points out that the acceptance of the idea of learning throughout life refutes the stereotypical view of the ageing process as “ossification and stasis”, maintaining that the ageing adult is not necessarily resistant to novelty and change. Wolff (2003, p.8) suggests that brain research confirms that lifelong learning is “not a dream since it is embedded in the capacity of the brain to respond throughout life to environmental demands”. These demands are exemplified by the new technological advances that occur almost daily and need to be assessed for relevance to the lives of individuals.

As changes occur in an increasingly technological globalised society (Steinberg; Donald, Najman & Walley 1998; Cornford 2000; Faris 2002; Hase & Kenyon 2000; Candy 2004), words reflecting new technology such as digital, online, virtual, cyber,

techno, hyper and recently, mobile, have become accepted couplings with learning to describe aspects of ICT learning. Brink (2001) sees ICT use becoming the norm rather than the exception in raising and maintaining the standard of living and quality of life in the e-society as she links e-life and successful ageing. Brink reinforces Haddad's (2000) view about the importance of easily accessible universal, rather than elitist, access to ICT.

McKie (2000, p.282) states that "ICT increasingly pervades the arenas in which adult learning takes place". In asserting that there are many older adults with "expertise and enthusiasm for the relatively new technology phenomena", McKie bears out the findings of Williamson, Bow and Wale (1997). These findings support the argument that today's third age learners are acquiring some of the new technological knowledge and skills, which will be essential for the survival of tomorrow's baby boomers.

Barnett, Buys and Adkins (2000, p.72) report that their study shows that ICT interaction offers significant benefits to older adults, claiming that "intellectual skills, which may have declined in old age, can be revived with coaching and practice".

Quigley (2004), in discussing gerontechnology, a new applied science, adds weight to this argument as he comments that physical fitness without matching social and intellectual fitness is not enough to stave off problems in later life. Withnall (2000b, p.292) cautiously acknowledges that there is "some emerging medical evidence concerning the beneficial results of continued mental stimulation in later life".

There is no question that many older adults are not only able to learn the skills they need to use computers to access ICT, but are also keen to do so for a range of intrinsic and extrinsic reasons. The relevance for this thesis is not so much what these seniors, who are adopting ICT technology, use this new knowledge for, or even why they acquire it, but how this learning can be fostered rather than inhibited. Much training and support provided for older adults, who wish or need to acquire a range of computer or Internet literacies, is by 'young' older adults, many of whom were early adopters of new technology as it evolved.

EARLY AND LATER ADOPTERS OF NEW TECHNOLOGY

Adler (2002) contends that seniors are not generally 'early adopters' of new technology, but that once a technology becomes more mature and less expensive, more reliable and easier to use, and its benefits become more apparent and more

compelling, seniors are as likely to use it as young people. The early adopters in any discipline have built incrementally on a firm knowledge and skills base as new knowledge has been acquired as required (Rogers 1995; Redding, Eisenman and Rugolo 1998; Tsang-Kosma 2003). Rogers' diffusion of innovation theory, which he represents as a classic bell distribution curve, categorises users of new systems as innovators, dubbed 'gadget freaks' by Adler (2002), early majority adopters, late majority adopters, and laggards.

In relation to the diffusion of ICT among older adults, Paul and Stegbauer (2005) point out that contrary to the diffusion of other innovations (Rogers 1995), ICT adoption has an advantage for latecomers, "ease of use, low cost, a large variety of offers, and more participants". Norris, (2001, p.9) offers another view as she comments that "generational difference in adaptation to new technologies is perhaps the most significant indicator for the future diffusion of the Internet". Paul and Stegbauer (2005) contend that the diffusion rate among the elderly is increasing, but will continue to lag behind the figures of the young users. They cite factors like gender, education and socio-economic status as playing an important role for acceptance and diffusion by latecomers to ICT.

Imel (1998) states that older adult computer users who consider themselves to be 'novices' are more likely to have taken part in training than those who consider themselves to be 'experienced'. Adler (1996) and Timmerman (1998) reinforce this hypothesis as they report that experienced computer users tend to be self-taught or to have learned at work. Timmerman (1998) speculates that older adult adopters of computer technology are lifelong learners who prefer self-direction as a learning style.

The later adopters include Rogers' late majority and laggards, the intentional non-adopters of ICT. Adler (1996) finds that most retired older adults fall into these two categories. Paul and Stegbauer (2005) contend that non-ICT users are regarded as obstacles to innovation and progress, the elderly considered to be the most difficult group to motivate. While early adopters, whatever age, are more likely to seek out and use mass media than later adopters, de Jager (2005) warns that the pattern is not the same for every new branch of technology, each of which needs to be considered individually. For example, an early adopter of computing may be a late adopter of cell phone technology and vice versa, depending on need or personal preference.

Beaton, Cunningham and Wajcman (2005), in a paper on the impact of mobile phones in Australia, recognise the inadequacy of the elderly in embracing the utility of mobile phone technology, as they write words that fit very well with this thesis if the word 'phones' is replaced by 'computers':

we have some feel for our individual limitations and we must all be stunned at how we middle-aged adults lag frustratingly behind our children who manipulate the phones as if they were born with them (p.2).

Beaton, Cunningham and Wajcman ask how we can use this technology to contribute to a future that maximises the benefits for all ages. Prensky (2001) provides statistics for reflection about very early technology adopter American children, whose average individual technological interaction with cell phones and computers is reported to include 10,000 hours talking on cell phones and over 200,000 hours sending and receiving e-mails and text messages

In this study the focus is on early and later adopters of ICT, the early majority and late majority who equally make up 68% of a group studied and categorised by Rogers (1995). Redding, Eisenman and Rugolo (1998) distinguish between early adopters of ICT, those individuals who respond to change as it occurs, and late adopters, who hold back but ultimately adjust to the change. The early adopters of new technology, while they master processes that through time become redundant as new programs are refined, also acquire a 'historical perspective' which the late adopters lack. Redding, Eisenman and Rugolo (1998) suggest that the learning task for early adopters of new computer technology is very different from that of later adopters, who decide themselves or are persuaded by others into using a computer for the first time. The early adopters, many of whom are the present trainers of older adult learners, spent much time and effort in learning a plethora of tedious and convoluted commands, many of which have now been discarded. These obsolete operations are of little use or relevance in this age when, as Haddad (2000, p.7) comments, the world can be brought into the classroom or indeed the living room "by the touch of a button or the glare of a screen". The late comers to technology who do not want to know about the underpinnings but just want to click and go, are able to take advantage of the greater numbers online, the lower cost of equipment and the variety of training and support available comment Paul and Stegbauer (2005).

An example of an early adopter of the forerunner of the computer keyboard, the typewriter, which was new technology in its time, is Mark Twain (Quigley 2004), but arguably, one of the most assertive self-directed early adopters of ICT is Malcolm Knowles. Knowles (1991, p.62) stresses the need to apply andragogical, or learner-driven principles, to the design of personal computer training as he reports that he bought himself one of the more popular personal computers in December 1981, set it up in his study, and “started reading the instruction manuals with enthusiastic anticipation”. In an open letter written in 1983 to the computer industry at large, Knowles (1991, p.163) writes of his frustration and disappointment that the “current software producers and manual writers are basically computer engineers (or have been trained by computer engineers), who understand how the machine works but have no idea about how adults learn”. Knowles offers guidelines, which could well be applied to improve the hard copy and online help available today, much of which is reported by many older learners to do little to make new technology accessible to new users.

NON ADOPTERS OF NEW TECHNOLOGY

Quantitative statistics detailing the numbers and trends for older adults using computers and accessing the Internet are readily available in Yearbooks and online from the Australian Bureau of Statistics (ABS 2005). There is, however, a synergy with this study in the turn of the century reports from Lenhart (2000) and ANTA (2000). Lenhart writes that seniors are clearly the largest group who are not online, with adults over sixty making up nearly half of these non-ICT adopters. Her report on a survey of non-users separates those adults without Internet access into three groups, the 'eagers', the 'reluctants' and the 'nevers'. Lenhart states that women make up over fifty percent of the never population while over eighty percent of nevers are over the age of fifty. The eagers plan to get access, the reluctants will probably not go online and the nevers, who make up a third of those surveyed, do not plan to log on. A comparison can be made with an Australian survey in the same year. ANTA (2000) reports that a third of the respondents in their survey about attitudes to, and value of, learning about computers are categorised as 'love to learn', while a quarter are non-ICT adopters. It can be argued that there should be non-technology transition provision for the older nevers who have little or no need or desire to become computer literate. It is for the potential ICT users, the eagers and those in two additional

categories suggested by the researcher in this current study, the 'mildly curious' and the 'could-be interested', who fluctuate between the reluctants and the eagers.

Participation by the whole population would be the best way to make use of the technological and social potential and advantages of the Internet, according to Paul and Stegbauer (2005), however, they suggest that the level of interest depends largely on whether factors that foster computer and Internet literacy acquisition in later life exceed those factors that inhibit such learning. Some of these ICT literacy acquisition incentives and barriers are outlined in this literature review chapter and in the results and discussion sections relating to Research Question 3.

McGivney (1999) equates the rate of progress in any learning direction with a corresponding presence or absence of the people, structures and services to provide support on the learning journey. A tangential aspect of the late adoption of ICT, is the correlation suggested by researchers between the acquisition of a second or subsequent language and learning to use a computer in later life (Prensky 2001; West 2003b).

COMPUTING AS A SECOND LANGUAGE

Second language acquisition theorists have long argued that despite there being a critical pre-adolescent period for learning a second or subsequent language (Cook 1991; Zimbardo 1992), adults have this capacity as a lifelong potential (Brown 1989; Genesee 2000). The findings from research into the learning brain (Guttman 2001; Prensky 2001; Victoroff 2001; Chui 2001; Wolff 2003) offer scientific confirmation of this lifelong capacity. These researchers add to the growing body of knowledge about brain plasticity and its effect on new learning in later life. Equating learning computing with second or subsequent language acquisition, Prensky differentiates between the way children and adults learn a language other than their mother tongue, describing young and older learners as digital natives and digital immigrants. This analogy parallels the line of thinking on the uptake of cell phones by older adults (Beaton, Cunningham & Wajcman 2005) mentioned earlier. Magnetic resonance imaging (MRI) is used to identify which parts of the brain are involved in learning (Prensky 2001; Wolff 2003). It has been shown that any additional languages learned in adulthood are stored in a different place in the brain than the language or languages learned as children.

A sociology perspective is offered by West (2003b p.62), who also uses an immigrant analogy, as she argues that the many factors that impact on the successful relocation of older adult migrants in a new country can apply to some extent to older individuals who are adapting to new technology in the context of a changing society. She likens this older adult cyber learning experience to “finding oneself in a radically different country, as in the case of migrants.” West (2003b) cites Cox (1989) who compares migration in early and later life with learning new technology as a child or as an older adult.

Cook (1991) includes loss of brain plasticity in her list of markers in second language acquisition as well as cognitive and social factors, which she argues may be qualified by the variables of intelligence, gender, experience and first language proficiency. Glendenning (2000, pp.41–42) cites Butler (1975, pp.6–16), who charts a number of myths associated with of the old, which are themselves “very old and lodged in the folk memory of western society”. Myths listed by Butler are unproductivity, disengagement, inflexibility, senility and serenity, with chronological age included as a ‘kind of myth’. Wolff (2003), who with Greenfield (2003) is an exponent of neural science, refutes many of the myths of ageing and expounds the concept of periodicity. This concept, which identifies the windows of opportunity for optimum learning, can be equated with both ‘readiness’ of older adults to acquire new technology knowledge and skills and the opportunities for such acquisition.

Genesee (2000, p.1) uses a computer analogy in discussing the specialised areas of the brain involved in processing information, particularly in second language acquisition. Genesee likens the young brain to a computer with “incredibly sophisticated hardwiring but no software”. He contends that the software of the brain, like the software of computers, is able to harness the exceptional processing capacity of the brain to carry out specialised functions, including language, but points out that the responsibility of harnessing brain power they were born with, is up to the individual. Damasio (2002) on the other hand declares that the brain is not a computer. He argues that recall is not just a matter of clicking on an icon to retrieve information from a neural hard disk and that the process of remembering is pro-active rather than passive. Greenfield (2003) comments on current scientific thinking as she observes that neuroscience is providing answers to many questions asked about how people

learn across the lifespan. Greenfield's acknowledgment that solving how the brain works is one of the great scientific challenges of our age has implications for researchers and practitioners who are concerned with questions about the way older adults learn new skills, in particular the new ICT skills needed to function in an ever-changing world.

EARLY CHILDHOOD EXPERIENCES

Some researchers hypothesise that lateralisation may contribute to the difference between juvenile and adult second language acquisition, and therefore of interest to a study of those learning computing as a second or subsequent language. Brown (1989, p.88) points out that "as a child's brain matures, various functions become lateralized to the left or right hemisphere". He acknowledges, however, as does Buzan (1991, p.12) that while many left-right hemispherical preference differences can be found, both sides of the brain work as a team. Buzan adds that each hemisphere acts as a "support and checking agent" for the other. Lateralisation is found to be "somewhat more pronounced and more complete in males than in females" (MacKeracher 1996, p.88), with communication between right and left hemispheres easier in females (Brown 1989). Brown also states that there is evidence that right hemisphere dominance, which is important in early language learning, lessens in later learning. The implication for facilitators of learning is the need for awareness that both hemispheres require 'food for thought'. According to MacKeracher (1996, p.92) the left hemisphere responds best to "time-ordered sequences; the use of words and numbers, and analytical thinking", while the right hemisphere responds best to "visual, non-verbal materials and on simultaneous presentations with lots of redundant information".

Many third age learners grew up in the era when the "ancient bias against left hand, right hemisphere orientation" (Edwards, 1992, p.33) resulted in parents and teachers forcing children to use their right hands for writing and eating. This practice was common at the time when adults who are now in the third age, were children. The forced transposition of natural left hemisphere logical and right hemisphere analogical specialisation was subsequently thought to cause problems into adulthood and has been discontinued. MacKeracher (1996, p.88) notes that "hemispherical specialisation is reversed in some people, particularly those who are left handed".

The effect, if any, of early childhood change from left hand dominance on later life ICT learning, although outside the scope of this thesis, emerges as a topic for further research.

COGNITIVE AGEING ISSUES

No study of adults learning in later life can avoid touching on aspects of cognitive ageing. Jones and Bayen (1998, p.676) for example, refer to cognitive ageing researchers, who over a forty year period, identified cognitive abilities which may be relevant for the acquisition of computer skills that differ in older and younger adults. Jones and Bayen suggest that age related changes are due to cognitive slowing, which is found to be an undeniable reality often confused with learning ability. Buzan (1991, p.141) contends that “old myths are disintegrating in the glare of our knowledge about ourselves”. Referring to the way human mental ability declines with age, Buzan dismisses the report that a peak occurs between eighteen and twenty-five and then declines rapidly and steeply, declaring that the decline over the lifetime is little more than an insignificant five to ten percent. His argument is that people surveyed may not necessarily be practising proper learning and remembering. Buzan contributes to the positive ageing argument, drawing attention to older people who have remained active and explorative rather than assuming that they are going to get worse as the years passed. Buzan further notes that the recall of these ageless older adults is often almost total and that their ability to understand and learn new areas of knowledge at least equals that of younger and less experienced minds. Baltes (1993, p.45) suggests that memory capacity can be increased in later life with memory training techniques but that it does not reach previous levels.

Swindell (1991, p.177) finds that “no significant loss of intellectual functioning needs to be associated with ageing if the individual is cognitively stimulated throughout the lifespan”. Johnston (2001, p.2) supports this view, reporting that “it is the adults who did well in their early formal schooling who are most likely to take up further formal or informal training in later life”. He stresses that for this reason, individuals, companies and countries must see clear benefits from investing in the acquisition of new skills and that adult training must put more effort into “drawing in those who have missed out when young”. Jarvis (2001, p.7) comments that “gradually, it is becoming accepted that the mind does not necessarily cease to function when

individuals retire from work". He points out that there is growing evidence that "education actually helps to protect the mind against decline in cognitive functioning". Greenfield (2000) reinforces these positive ageing views as she argues that the brain does not necessarily have to deteriorate, but is the part of the body that will get "better and better as you get older".

More recent research findings of particular interest to both present and potential third age ICT learners, suggest that much cognitive loss is largely preventable (Guttman 2001; Prensky 2001; Wolff 2003). Guttman cites the work of Chui (2001), whose study aims to head off cognitive marauders before they destroy everything in their path. Guttman reports that there are 10,000 baby boomers in the U.S. reaching age fifty each day and they want to know what can be done to preserve brain function as long as possible.

Another finding from neuro-plasticity research by Prensky (2001) and Victoroff (2001) is that there is no longer any question that stimulation of various kinds actually changes brain structure and affects the way people think, and that these transformations go on throughout life. Prensky reports that the brain is massively plastic and can be, and is, constantly reorganised with the supply of brain cells continually replenished. The old idea that we have a fixed number of brain cells that die off one by one, that is, that brain ageing is equated with neuron failure, has been replaced in the last decade due, in part to the advances in brain imaging technology. Guttman (2001, p.2) sums up recent neuro-scientific research studies that posit that cognitive decline, like age related memory loss, is not due to neuron loss, but to "complex chemical interaction in the brain that occur over time". Victoroff (2001) contends that cognitive challenge actually creates new neurons in the adult brain.

Insight to changes in cognitive functioning and intelligence in later life is discussed by Manheimer, Snodgrass and Moscow-McKenzie (1995, p.44) who cite the use of a computing analogy by Baltes (1993) to distinguish between the two types of mental activity, an analogy which is useful more than a decade later:

- the hardware of the mind is the biologically-shaped architecture of mental functioning, which operates the speed and accuracy of memory, sensory input, our ability to make distinctions and comparisons, and our ability to put things in categories; and

- the software of the mind is more a product of culture, upbringing, and environment and includes reading and writing skills, language comprehension, professional skills, knowledge about ourselves, and the skills that help us master or cope with life.

Burke and MacKay (1997, p.5) add to the cognitive ageing debate, as they note a “heightened interest in ‘normal’ cognitive ageing” by researchers. They differentiate between ‘spared’ semantic memory, which remains constant, and ‘impaired’ time and space specific, episodic memory, which declines with age. Long term semantic memory enables older adults to reminisce with great clarity of detail (Burke & MacKay 1997; Sargeant & Unkenstein 2001) and to perform activities, which were learned through the lifespan, such as playing the piano or board games, driving a car, touch typing or shorthand writing. Short term episodic memory disables older adults as they misplace keys and glasses and forget names and phone messages. One of the implications for those involved in assisting older adults to become ICT literate is the recognition that until the new knowledge needed for this acquisition is internalised as semantic memory and the new accompanying skills are well practised, they are as ephemeral as items in episodic memory and are thus affected by cognitive ageing. Sargeant and Unkenstein recommend ways of triggering memory recall from storage and suggest strategies to assist older adults who are aware of diminishing short term memory, difficulty in concentrating and an inability to ignore distractions.

An observation from Burns (1995, pp.171–172), sums up much that has been written by researchers during the preceding decades:

Investigations into memory in conjunction with ageing are beset by difficulties in separating learning ability, intellectual ability, memory, motivation and a host of other situational and physiological variables such as pacing or speed (the time a person has to respond to an event), sensory deficits, meaningfulness, expectancy and others at which we currently can only hazard a guess.

Another factor, which may have an effect on learning ICT in later life, is the early acquisition of musical competence in playing a keyboard or other instrument requiring left-right hand task independence or motility, or more complex left-right foot dexterity in the case of pipe organ study. This acquired musical ambidextrous or quadridextrous proficiency may assist in the gaining of computer keyboard

competency and mouse skill mastery in adulthood. That there is a correlation between music training and practice at an early age, and a lessening of cognitive decline in later life, is argued by Pantev, Trainor and Roberts (2002). This causal relationship is borne out by Prenskey (2001, p.2) who reports that a “comparison of musicians versus non-players” brains via MRI scans shows a five percent greater volume in the musicians' cerebella. This cerebellum volume is not so much a gain due to early musical training, as a loss in the brains of non-musicians, thought to be a result of selective neural pruning (Prenskey 2001; Wolff 2003), a ‘use it or lose it’ result of a lack of musical experience. A three year study by these researchers is looking at whether the scientifically proved differences between the brains of musicians and non-musicians is an adaptation in the brain's structure resulting from intensive musical training and practice or whether genetic makeup triggers the changes. Pantev, Trainor and Roberts (2002) also note that it has been observed that adults who learn to play an instrument in retirement seem to reap cognitive benefits, different from, for example, learning to play bridge. Like lateralisation, while this aspect of learning and ICT is also not within the scope of this thesis, an opportunity perhaps exists for a survey to explore any correlations between early musical study and later life ICT learning.

SUMMARY

In this section, the gradual metamorphosis of adult education theory to a range of adult learning theories was traced. The later life segment of the lifelong learning continuum was examined with a special emphasis on new technology issues. The relationship between ICT literacy and second language acquisition was explored. Some aspects of the ageing brain were noted, including recent optimistic scientific findings that counter previously held views that suggested that cognitive decline for all in later life is both inevitable and irreversible. The reality of cognitive slowing with its implications for ICT training and support is acknowledged in the studies reviewed, also the recognition of individual differences rather than generalised similarities (Burns 1995). The possibility of a connection between early childhood experiences and later life cognitive health was reviewed. Research findings generally show that although much that occurs in later life is dependent on early educational experience and continuing lifelong mentally stimulating activity, there is evidence that

it is never too late to benefit from learning. In the next section, the focus is on how this learning in later life is affected by a range of factors.

RESEARCH QUESTION 2

How do older men and women learn to use computers and access the Internet?

INTRODUCTION

This section considers literature relating to how older adults gain computer technology knowledge and skills. It reviews research about learning styles and preferences and their effect on how older adults learn to interact with computer technology, and intrinsic or extrinsic factors that motivate or mobilise this learning. Age difference and gender issues that relate to third age ICT learning are explored.

LEARNING STYLES AND PREFERENCES

A number of researchers report that negative attitudes toward new technology can be modified, by providing the right amount of initial training and support, to match needs and learning styles (Irizarry & Downing 1997; Jones & Bayen 1998; Kelley, Morrell, Park & Mayhorn 1999; Mott 2000). Williamson, Bow and Wale (1997) find that while there is widespread existence of negative attitudes, after the initial fear of technology is overcome, many older adults can be “very positive about the Internet and in some cases very enthusiastic” (p.6). Kilpatrick and Hazzlewood (2001, p.167) find that most participants in their study of older adults learning to use computers to access the Internet, “readily identify their learning styles as look, listen and do”. Fidishun (2000, p.3) acknowledges that some students, who are not self-directed learners, may need to have classroom type instruction that matches their needs. She extols the virtues of web-based technology as “a perfect path for the facilitation of self-direction” and encourages the designers of online courses to use multiple forms of presentation to enable learners to follow the path that best suits their needs and learning styles.

Wakefield (2001, p.3) makes a fine distinction between learning styles and learning preferences—terms, which she notes are often used interchangeably. She draws on two researchers to define learning styles, McLoughlin (1999, p.224), who defines a learning style as “adopting a habitual and distinct mode of acquiring knowledge” and Dunn (1998, p.141), who describes a person’s learning style as “the way he or she

concentrates on, processes, internalizes, and remembers new and difficult academic information or skills". Dunn expands this as she explains that these attributes often vary with "age, achievement level, culture, global versus analytic processing preference and gender". McLoughlin (1999, p.225) refers to Curry's (1991) fivefold classification of the similar yet quite distinctive learning styles/preferences terminology. Curry lists learning preference, learning strategy, learning style, cognitive strategy and cognitive style, while McLoughlin suggests that the "most salient dimension" that differentiates learning styles from learning preferences is the degree to which the latter can be observed, and the former, inferred. Wakefield (2001) cites Sadler-Smith (1997, p.52), who defines a person's learning preference as "an individual's propensity to choose or express a liking for a particular instructional technique or combination of techniques". For example, while learning preferences have an element of choice, identifiable by self-assessment, and learning and cognitive strategies can also be easily elicited by verbal enquiry, categorisation of cognitive and learning styles requires the employment of more formal assessment instruments outside the scope of this research study.

Coffield, Mosely, Hall and Ecclestone (2004, p.7) introduce their comprehensive study on learning styles with the question "How can we teach students if we do not know how they learn? A legion of researchers representing a range of disciplines, who have investigated the learning styles and preferences of people of all ages, have produced a plethora of reports which make up the body of knowledge known as learning style theory. These reports lie along a learning style continuum where Coffield et al. (2004) place the major research studies. At the left and right hand ends of the continuum are:

those theorists with strong beliefs about the influence of genetics on fixed, inherited traits and about the interaction of personality and cognition; and

those theorists who pay greater attention to personal factors such as motivation, and environmental factors like cooperative or individual learning; and also the effects of curriculum design, institutional and course culture and teaching and assessment tasks on how students choose or avoid particular learning strategies.(Coffield et al. 2004, p.46)

Coffield et al. (2004) conclude their study with a question as they concede that the problem of which learning styles to choose, remains. One reason for this is that many

further education (FE) and adult community education (ACE) courses are part-time or of short duration. Atherton (2002) adds to the learning styles discussion as he offers a coal-face solution away from the ivory tower theorists. Atherton reverses Haddad's (2000) plea for student-based ICT literacy acquisition to be deemed a necessity rather than a luxury, as he considers that in the modern 'real world', learning styles theory is an academic luxury rather than a practical concept. He also deems a luxury, being able to work with small enough groups of learners to be able to tailor teaching style to address every particular student preference. Atherton, in his introduction to his paper on 'Heterodoxy', argues strongly that "pandering to learning styles may be doing the students a disservice" (ibid. p.3). Atherton suggests that making everything as easy as possible, denies students the opportunity of becoming versatile and more able to respond both to formal teaching and learning. A reference by Atherton to the enormity of providing an Open University resource-based program to be sent to thousands of online learners, all with individual learning needs, puts the comparison with actual small informal adult community learning groups into sharp focus.

Swindell (2002, p.10) found in a 2001 study of participants in U3A online courses, where a fifth of those enrolled were aged seventy-five years and over, that 68% preferred some email interaction with course leader and group members, 20% preferred to have considerable interaction and only 12% preferred to have no active contact. These findings all have implications for trainers and course developers. For example, Jarvis (2001, p.48–49) points out that "learning is not always an exciting adventure - it is sometimes frightening to people who do not wish to, or cannot, learn new things". Jarvis attributes the response of older, and younger, people who either opt out of new situations or who appear inflexible or resistant to change, to their level of confidence, their willingness to experiment or simply their personality. Wakefield (2001, p.1) argues that when learning activities "are congruent with the individual's identified learning styles or preferences" and that when this learning is structured to motivate the learner, the effectiveness of the learning process may be considerably enhanced.

MOTIVATION OR MOBILISATION

Educational psychology has taught us for long [sic.] that motivation is an indispensable ingredient of learning. But motivation theories, until fairly recently, were of little help to understand and facilitate adult learning. (Carré 2000, p.3)

According to Carré, a new vision of adult motivation for education and its impact on learning is slowly emerging. This vision engages researchers, experts and practitioners and invites them to have a second look at the field of motivation and action within the realm of adult education and learning. Burns (2002, p.186), in referring to learning in the workplace, proposes that motivation is not a characteristic that some have and some don't, but that it "depends on the needs of the individual within a given situation". Burns posits that motivation is the key to learning, considering that, when intrinsic interest in a task or challenge is present, persistence will override barriers, resulting in high levels of effort towards goals.

Carré (2000, p.1) asserts that over the last twenty-five years, "most of the new practical developments in adult education have taken for granted the fact that adults are necessarily 'volunteers' for learning". He contends that as new approaches to learning develop, more and more commitment is expected from learners themselves if any result is to be hoped for. Thus, adults are more and more mobilised to engage in training, but are not necessarily motivated to learn. Tight (1999, p.3) foreshadows this view as he argues that adult learning as a voluntary activity is a lifelong learning myth. Tight dubs new forms of compulsory learning, as in e-commerce and e-banking, as 'life sentence learning'. On a more positive note, McGivney (2004) nominates three factors that she considers to be particularly potent motivators. These are belonging to a voluntary group, the advice, encouragement and example of others and the example of members of a peer group.

GENDER AND AGE DIFFERENCES

There is a much greater interest and emphasis on gender equity than in age differences in the literature reviewed and gender difference is therefore the main focus of the rest of this section. McFarland (2000) in an American PEW commentary, reports that women, including older women, are not only catching up with men, but are passing them on the Super Highway as the number of women going online has begun to outstrip the number of men. He also claims that the fastest growing age group on the

Internet consists of women older than fifty-five. McFarland's prediction that while older women were currently lagging behind older men in surfing the Internet, they would not only close the gender gap but may create another just as wide where women were in the lead. Four years later another PEW report, Fox (2004) offers figures that indicate that the trend in regard to gendered Internet connection and use as foreseen by McFarland in 2000 has become a reality and is continuing. The report that claims that older women have reached parity with older men is backed up by statistics that show that where the male:female online access proportion in 2000 was 60:40, in 2004 it was 50:50, with the same proportion recorded for the general population. The difference in gendered nature of attitude to and use of computer and Internet technology is discussed by Barnett, Buys and Adkins (2000, p. 70) who report that the men in their study are found to "unconsciously have more knowledge" about computers. The men tend to have been involved in the early introduction of mainframe computers remembered for their "number crunching practices rather like a machine process". Barnett, Buys and Adkins find that women, on the other hand "approached the computer as something quite new – there is an element of fun and excitement" (ibid, p. 70).

Manheimer, Snodgrass and Moscow-McKenzie (1995) suggest that gender equity of computer use and the skills employed, and the feelings of competence affect the degree of control over lives and intellectual functioning. They conclude that women as well as men have technological skills, but also report that men are more receptive than women to new technology. A similar view is reported in numerous early studies cited by Czaja and Sharit (1998), but they report that this is refuted in their own research, as is the suggestion that women have more negative attitudes toward computers than men. Czaja and Sharit (1998, p.329) find, however, that while women experience a greater increase in comfort with computers than do men, women also find computers to be "more de-humanising following task-based experiences". Mott (2000), on the other hand, reports that women show no more anxiety than men and exhibit a pragmatic approach, using computers as tools, whereas men tend to use computers as an excuse to play. She claims that her research, which includes questions on gendered communication, sheds new light on women's approaches and attitudes towards computer use and suggests a levelling of the playing field in terms of communication patterns mediated via computer technology. A recent cyber-

psychological Belgian study of more than a thousand men and women (Broos 2005) finds that females have a more negative attitude towards computers than men and that, in addition, computer experience reduces anxiety in men, but does not do so in women.

The extent to which gender differences appear in the choices of information and communication sources used by older men and women is explored by Barnett, Buys and Adkins (2000, p.69), who report that when the men and women in their study have access to new technology, they make equal use of “computer mediated activities”, but that the men appear to be more likely to own a computer. The Australian Bureau of Statistics (ABS 2001) reports that in every age group, males are more likely than females to use home computers. Imel (1998, p.1) agrees with Adler (1996) and Timmerman (1998) that women are less likely to go online than men but contends that “women are more likely than men to have taken a class or learned from a friend”. This particular aspect of gender ICT learning difference was not explored in this study, but may have some worth as a topic for further gender-based research.

Wolff (2003) adds scientific weight to the argument as he reports that Kimura’s (2002) research shows that “men and women display different patterns of behaviours and cognition that reflect hormonal influences on brain development”. Other research surveys show that while a substantially higher proportion of older women than older men take part in learning activities (Swindell & Mayhew 1998; Swindell & Vasella 1999; Foskey 2001; Swindell 2002), the gender balance appears to be changing. Swindell (2002) notes a trend that is redressing the previous gender imbalance, where participation by men in both actual and virtual U3A courses, previously lagged far behind that of women. He reports that the proportion of women to men in initial 1999 U3A online courses was 72% to 28%, despite the generally accepted view that many more men than women were using the Internet at that time. Three years later the proportion had changed to a ratio of 59% women to 42% men. Reason (1992) anticipates this trend noting that as women’s needs are escalating, so are those of a newly emerging group of men, particularly within the neighbourhood house learning community. She attributes this trend, which is marked by greater male participation in informal learning activities, to new gender equity problems, which are compounded by unemployment and changing roles within the family.

Findsen (2001, p.1) points out significant gender differences in longevity, which he calls the “feminisation of old age”, while Barnett and Adkins (2001) and Swindell (2000) contend that older women are one of the most disadvantaged groups in terms of continuing education, including ICT uptake opportunities. Swindell draws attention to the fact that a woman aged 65 in 2000 was born in 1935 and most women in this age group were forced to leave education too soon. Barnett and Adkins (2001, p.23) explain that older women’s computer use is important as it has the potential to address some of the “social silencing and devaluation of older women’s wisdom and experience”. They further suggest that older women can appropriate computer technology to “maintain their independence and identity, so threatened by the ageing of the body”.

Steinberg (1994, p.1) advocates that special attention be given to very old women and how at least “to get appropriate information to them so that they can make informed choices”. Steinberg qualifies her advocacy adding that this view is not excluding men or other age groups, as much of what is considered necessary for the well-being of older women also benefits the whole community. This last comment applies equally to all aspects of third age learning and new technology discussed in this study. In relation to gender equity, however, opinions are often polarised and this may impact on older women’s attitudes toward using computers and accessing the Internet. Steinberg (1994) states that older women are more numerous than older men. She points out that they live longer than men on average, are left to live alone more often than men, and with greater disability “they are usually poorer and provide much of the caring in the community” (p.1).

In a number of studies of Internet use in public facilities, a lack of mobility is often seen as an insurmountable barrier to accessing new technology (Hiemstra 1993; Millar & Falk 2000; Williamson, Wright, Stillman, Schauder & Jenkins 2000). The lack of transport is also given as a major reason by Swindell and Vasella (1999) for the non-participation in traditional U3A courses, causing the social isolation of older women in particular. They note that the majority of students in U3A online courses are female and state that the high proportion of older women attracted to the pilot U3A Isolated Bytes program “is likely to be of interest to policy makers who are concerned with the low take up by women of Internet technology”. Swindell (2000)

adds that U3A groups in Australia are providing intellectually stimulating courses for almost 40,000 older members, of whom a large proportion are women and of this proportion, the majority are 65 or older.

MacKeracher (1996, p.141) declares that “distinctions based on gender or race have failed to prove that either factor makes any difference in cognitive ability or learning capability”. MacKeracher, in exploring gender learning differences, contends that while some men prefer relational strategies and some women prefer autonomous strategies, some men and women use both strategies. She cites Baxter-Magolda’s (1992) study that finds that men and women do not differ in what they learn but rather in how they learn, but points out that as a mixture of behaviours among males and females has been found, stereotypes predicated on differences between the genders are counter-productive to learning.

Hiemstra (1993, p.3) considers himself to be “a feminist and an enthusiastic supporter of feminist values, causes and initiatives”. He is an early champion of older women and older women’s ways of learning following his review of literature about women’s ways of knowing. The introduction to this concept changed Hiemstra’s “own ways of working with adult learners”. Hiemstra’s inquiry into psychological and physiological aspects of ageing reveals a special interest in assisting older learners, in particular, by “tapping the full potential” of women as they age.

AGE DIFFERENCES

Issues of gender and age differences in accessing new technology feature in studies within the past decade by Manheimer, Snodgrass and Moscow-McKenzie (1995), Czaja and Sharit (1998), Mott (2000), Barnett, Buys and Adkins (2000) and Jarvis (2001). Czaja and Sharit (1998) report that the older people in their study, who were aged from 20 to 75, perceived less comfort efficacy and control over computers than did the younger participants. Mott, however, reports that analysis of the data from their studies indicates relatively few gender differences and no age differences between older and younger adults’ attitudes toward computers. Manheimer, Snodgrass and Moscow-McKenzie (1995 p.160), in questioning whether computer technology is appropriate to older adults’ learning styles, ask if older adults have more difficulty than younger people in learning new technology. They conclude that older adults require more time to select and carry out appropriate procedures. This

conclusion bears out the findings of researchers such as Jones and Bayen (1998), which were discussed earlier in this chapter in the section on cognitive ageing. These findings, which are now generally accepted, are that while chronological age is not a critical factor in determining how adults learn as they age, cognitive slowing is a factor that has implications for learners and trainers.

SUMMARY

This section studied 'how' rather than 'what' older adults learn. A distinction between learning styles and learning preferences was explored, with a special focus on the motivation required to embrace new ICT learning. Gender equity of access and use of new technology by a range of older men and women was found to be a well researched topic, resulting in widely disparate findings. While men were reported to be more likely to own computers than women, they were also found to use different aspects of computing for different purposes than women. The gender imbalance reported by women in the early years of new technology access now seems to be lessening at a rate that is reversing the earlier situation. The consensus finding appears to be that chronological age is not as limiting a factor in the uptake of ICT, as individual inherited attributes and character traits, lifespan education and employment experience and a range of external variables. Age linked differences in either attitude to or use of new technology are not generalised in the literature as either fostering or inhibiting interaction with new technology. Cognitive ageing, however, as it is manifested by cognitive slowing, is among the barriers to third age ICT learning discussed with incentives in the next section.

RESEARCH QUESTION 3

What are the incentives for and the barriers to, learning about and via new technology in later life?

INTRODUCTION

Attitudes, perceptions and circumstances plus life situations and material circumstances continue to be the major influences upon participation. However, most institutional and policy-related interventions continue to focus on practical barriers. (McGivney 2001, p.12)

McGivney (2001) states that nothing has changed her view in ten years of research that the major barriers to participation are attitudes, perceptions and expectations. She

does qualify this view, however, by conceding that life situations and material circumstances also play a part. The literature reviewed in this section contains more references to barriers than to incentives for third age learners wishing to access new technology. Many in this older age group are reported to be on the wrong side of the numerous hurdles, gaps or so-called digital divides, which are attributed to a range of both self-perceived and external circumstances. Research findings about the extent and nature of a number of these digital divides are outlined and some digitally divisive myths are considered. Cognitive ageing and the attitude of older adults toward new technology, mentioned earlier in this chapter, can both be barriers to ICT learning. Other factors, which researchers have found inhibit the uptake of ICT by older adults are summed up by Scott (2001) who lists the digital generational barriers as:

- set-up and access costs;
- physical inaccessibility – difficulty in using many electronic devices;
- website inaccessibility;
- attitudes to technology such as fear;
- a perceived lack of relevant content;
- safety and security concerns;
- lack of skills and training; and
- illiteracy.

Another generational barrier to ICT learning is time to devote to training and to consolidating the skills learned. Many older adults are said to be members of the ‘sandwich generation’, a term coined by Abaya (1992). Variations on this concept impact on the retirement years of third age learners who are primary carers for partners or siblings, have responsibility for one or both aged parents, assist children and mind grandchildren for working parents. This last situation may be thought of as a generational digital divide.

OLDER ADULTS AND DIGITAL DIVIDES

Take any gap or dichotomy on just about any learning continuum, call it a ‘divide’, link it with information technology and preface it with ‘digital’ and there is a term for every situation for which new technology users, especially those who are learning in later life, may need assistance. Digital divides are of continuing interest to

researchers (Morris 1994; Kleiman 1997; Tight 1998; Wills 1999; Wills & Allen 2000; Bosler 2002; Hargittai 2002; Lucks 2002; West 2003a; Candy 2004) and to writers in the popular press. Articles on a variety of digital divides appear regularly in, for example, *The New Scientist*, *Time Magazine*, *the Bulletin*, *Readers Digest* and in websites such as <http://www.techknowlogia.com> and <http://www.digitaldivide.com>.

Tight (1998) warns that over-simplification and stereotyping of formal vocational compulsory learning and formal and informal voluntary learning dominate digital divide discourses. He suggests that rather than attempting to bridge the divide between participants and non-participants in lifelong learning, we should rather close the gap between the two discourses, which both have validity and are neither opposites nor alternatives. Wills (1999, p.1) warns that “the speed of change is so fast . . . there is no single hurdle to get over” and that those who “fall behind will be left behind”. Ito, Adler, Linde, Mynatt and O’Day (2001) comment that crossing the digital divide is something that has to be done many times, not just once, while Candy (2004, p.3) states that there are multiple digital divides to be attended to “to reap the benefits of the knowledge economy”. Lucks (2002) sees opportunities, but also gaps in our communities between those who keep abreast and those who fall behind, between the “technology proficient and the computer illiterate” (p.44). “The Digital Divide is alive and well”, write Wills and Allen (2000, p.13) in a response to a UK National Institute of Adult and Continuing Education (NIACE) survey. They contend that older adults in particular are being marginalised and left behind as the gap between the learning rich and learning poor is reported to be “widening and is reinforced by an information divide between those with access to the Internet and those without”. Wills and Allen claim that social class remains a powerful influence, as the sharpest rise in further education is among professional and managerial learners. They report that those with IT access are twice as likely to take up learning as those without it. Kleiman (1997) contends that Net Libraries can bring twenty-first century global ageing communities together, by bridging information gaps.

COST AND AVAILABILITY OF RESOURCES

Access to speedy and inexpensive electronic information and communication for third age learners depends not only on awareness of what's on the Internet and how to find it, but also on the availability of access to a computer and the knowledge and skills to

operate it. A different aspect is reported by Manheimer, Snodgrass and Moscow-McKenzie (1995), who list deterrents to accessing training in later life as location, time and cost, equating with three of the marketing 'P's – Place, Position and Price, identified by ANTA (2000). Withnall (2006) places physical accessibility to formal educational institutions, cost, timing—daytime rather than after-dark classes—and transport difficulties among the barriers to the decision of older adults to take the important first new learning step.

Williamson, Bow and Wale (1997) attribute a lack of use of new technologies by older adults to a corresponding lack of positive feelings towards using computers. NUA (2000) adds two new gaps to the continually lengthening digital divide list, a digital experience gap, and a broadband divide based on speed of access to the Internet. A digital experience gap between those people who know how to benefit from the Internet, and those who lack the knowledge to gain advantage from the power of the Web, can be bridged by timely training and support. A broadband gap develops as speed of access gradually increases between those with high-speed access and those without it and like the earlier gap in personal computer ownership, the major barriers to broadband services for households and community are affordability and availability. Scott (2002) reports that fears are expressed that the expensive and inaccessible broadband service is raising, rather than lowering, barriers to fast Internet access for individual and community groups. These barriers are gradually being overcome by cost effective advances in telecommunication technology.

For example, a low cost solution to the lack of ICT access in African third world countries, where 'one PC-one user' will never be the norm, is reported by Dr. Seb Wills in Daly (2005). This digital divide bridge called Nivo, the name derived from Ndiyo, the Swahili word for 'yes', is a pared down 'small box' computer. It is claimed to end digital divide, to be able to open up the potential of computing for billions of people at a cost of less than one hundred pounds a unit. This 'slim client' depends on a central server—soon to be wireless—and uses free open source software and ever-evolving technology that enables compressed pixels to be sent over the Net. Another cheap alternative is the Simputer, an Indian designed handheld computer that could perhaps help to overcome the tyranny of distance experienced in remote areas of other large continents such as Australia. The National Centre for Social and

Economic Modelling (NATSEM, 2000), however, supports overseas research findings such as Paul and Stegbauer (2005), who show that the most important drivers of Internet access are educational qualifications, income and age, not geography.

DIGITAL MYTHS

There is a growing list of researchers, including Hargittai (2002) and Warschauer (2002), who question that digital divides are entirely to blame for the non-adoption of new technology, or that the divides, which are firmly entrenched in the digital lexicon, should be defined in a simplistic binary form. Hargittai (2002) explores inequalities in access to the Internet and suggests that by analysing differences in how people use the Web for information retrieval, it can be discerned if there is a 'second-level digital divide' in the making, as the Web spreads to the majority of the [American] population. Hargittai (2002, p.2) contends that "it is increasingly important to look at not only who uses the Internet, but also to distinguish varying levels of online skills among individuals". She defines skill, in this context, as the ability to efficiently and effectively find information on the Web, that is, to achieve an acceptable level of Internet literacy (IL), a term that has joined other adult literacies. Hargittai further suggests a two-tiered approach to digital inequality and older people as her study aims to bridge what she considers to be a digital gap in the literature. This gap is between the reporting of mere structural Internet access, whether people are, or are not, on the Net and descriptions of what people actually do online.

Warschauer (2002, p.9) contends that there is a problem with the "digital divide concept in its implication of a bipolar societal split". As Cisler (2000) also argues, there is not a binary division between information haves and have-nots as so many writers attest, but rather a gradation based on different degrees of access to information technology. Paul and Stegbauer (2005) assert that information and Internet access in a world in which information is the most important resource can bridge the digital divide between the information rich and poor. Walsh (2000 p.5), on the other hand softens the ICT saturation approach as he comments that:

people may have perfectly rational reasons for not owning computers: they may have unrestricted access at work, or they may simply choose to receive their information through traditional media like television and newspapers.

Withnall (2006) equates these non-adopters, “those who seek to live in accord with their surroundings and to create a secure environment for themselves because they have achieved peace of mind and so may wish to limit their learning” (p. 14) with people Jarvis (2001) describes as harmony seekers. Withnall (2006) adds, however, that this apparent disinterest may be due to a lack of opportunity or other circumstantial constraints. Bosler (2002) reports that many seniors become a quivering mess as they huddle on the other side of the digital divide afraid of stepping over the widening gap, while others [non-adopters] go on with what they are doing, grimly determining that they don’t know anything about computers and never intend to learn.

Selwyn, Gorard, Furlong & Madden (2005) provide another UK perspective in that the digital divide may be less digital than simply a lack of need and therefore of disinterest or de-motivation. Rhetorical questions are asked by researchers about whether the digital divide glass is half empty or half full (Singleton & Mast 2000) and whether digital divides are real and widening or narrowing and almost non-existent. Brotman (2002, p.1) reports that there are many perspectives, but no encompassing view as he lists digital divide typologies:

- the luddites argue that no digital divide exists because technology does not really organise anything;
- the technologists—a few government tweaks will fix everything;
- the market adherents—market forces will eliminate the divide;
- the digital egalitarians—equal access to all strata of society;
- the digital democrats—politically driven access to enable e-citizens to participate in cyber-democracy; and
- the globalists—the divide is proof of United States’ isolation from the global economy.

Brotman advocates the creating of a digital dividend, a set of positive outcomes that the private sector and government can achieve by promoting widespread penetration and use of digital technologies.

Warschauer (2002) asks if the digital divide is a useful construct as it was originally conceived, or should the notion be broadened or reconceptualised toward a different framework for analysing technology access and social inclusion, a topic which is discussed in the Research Question 5 section later in this chapter.

ADULT LITERACY

A low level of basic literacy displayed by many older adults, who left school at an early age, is considered by Millar and Falk (2000) to be a deterrent to ICT uptake, where much of the material relating to the initial introduction to and ongoing use of new technology is text-based. Beddie (2003) refers to OECD reports that 45% of Australians have inadequate literacy skills, that is, they are unable to read a Warrantee Notice or the directions on a medicine bottle. Beddie (2003) makes the point that while this is accepted in Australia, in Sweden the 7% illiteracy is a matter of national shame. These figures need to be looked at in conjunction with figures reported by Wagner (2000) that up to 25% of adults in OECD countries are considered to be lacking the basic skills needed to function effectively in the [paid and volunteer] workforce. Wagner discusses the concern of policy makers about the lack of technological literacy skills that are needed for the new knowledge economy resulting from the rapidly changing nature of global ICT developments. Wagner also points out the apparent lack of consensus by the OECD countries about what technological literacy really means. Participation in new environments brought about by these changes gives rise to ever more complex literacy practices (Lo Bianco & Freebody 2001). Millar and Falk (2000, p.18) find that “positive outcomes as a result of online interaction coincide with positive experiences in a variety of social practices, including literacy and numeracy”.

Falk and Guenther (2002) give an example of functional literacy incorporating numeracy, as applied to the operating of an automatic teller machine (ATM). They explain that the numerical component is only a very small part of the overall task, which involves a range of understandings and technological literacies. Scott (2002) points out that older adults can lack confidence in using this technology and do not like public display of incompetence when using ATMs. Scott remarks that there is usually a skilled operator where an electronic funds point of sale facility (EFTPOS) is accessed, who does most of the work for them.

Processes such as globalisation, advances in new technologies and the growth of knowledge-based economies are bringing about significant changes in how people go about their public and personal lives, all of which have consequences for individuals and for their literacy skills. As a result, individuals must acquire, develop and

improve their literacy skills throughout life in response to changes in society, at home, in the workplace and in the broader community. On a more challenging note Waterhouse and Virgona (2004) ask how successful people with limited literacy achieve and sustain employment and how they have developed resiliency in the face of significant setbacks. They find that multiple individual, psychological, social, environmental and contextual factors contribute to resilience in overcoming barriers. This qualitative view perhaps indicates how necessity can sometimes result in strategies being put in place to overcome the accessibility barriers that are documented in much quantitative research reporting.

ACCESS TO ICT FOR OLDER ADULTS

Excluding disabled and elderly people from 'mainstream life' is unpleasant and wasteful. We lose life quality, we become less productive and more dependent, which suits nobody. (Mitchell 2002, p.69)

Accessibility to ICT is a partnership between the users and the web content developers and website designers. Gough (2002, p.148) states that "there's really not much point in having a web presence if you make it difficult for people - any people - to find the information they want and need". Gough is adamant in his assertion that usability is the key to accessibility, despite arguments to the contrary that usability and accessibility are thought by some researchers to be two very separate issues. He suggests that a 'firm grasp' of usability principles is the basis for creating websites that are accessible by everyone. He points out that "the Web is not a giant brochure; but is a dynamic, interactive and immediate medium with very high user expectations". Gough joins with Scott (1999) in identifying the older age audience as a potentially huge and growing customer base.

Mitchell (2002, p.69) refers to website design as he writes that "the concept of diversity must be considered at all stages of the planning and execution phases". Mitchell also points out that "complexity excludes those who can't understand the current communication practices, which are primarily targeted toward a white Anglo-Saxon, able-bodied, English-speaking audience". Clark (2004) reinforces this comment as he reports that Australia's diverse community has more than 22% of people from non-English speaking backgrounds, who tend to lose their second and subsequent language skills as they age. This accessibility gap is being addressed to

some extent by hardware and software designers and webpage content and layout developers. Kleiman (1997) points out the need for libraries to be ready with new strategies to cater for older adults who are an ever-changing, complex segment of our society.

AGE RELATED IMPAIRMENTS

Williamson et al. (2000) in their study evaluating adaptive technology designed to assist people with a variety of age related and other disabilities, draw attention to the gap or divide between the able and the disabled. Clark (2004) reports that more than 19% of the population have a disability, 69% of those aged fifty-five and over are vision impaired and 65% have a hearing problem. Williamson et al. (2000) state that adaptive technology can dispel anxiety among older adults who have age related impairments.

Research by Williamson, Bow and Wale (1997) indicates that few older people were using the Internet in the mid 1990s in Australia and while there has been a considerable change in this situation, there are still major barriers to be broken down, especially for older people with disabilities. Jarvis (2001) echoes much of what researchers have written as he points out that provision should be made for physical acuity decline. Williamson et al. (2000) offer a solution for problems faced by older adults with age-related impairments, as they advocate the use of assistive and adaptive technology solutions. They also endorse the idea of mentors of the same age as the students to teach and support them in small groups.

SOCIAL ISOLATION

Social isolation, which stems from any or all of the above mentioned inhibiting digitally divisive factors, is a common problem in both rural and metropolitan areas and has attracted attention from a range of researchers over the past decade, including Manheimer, Snodgrass and Moscow-McKenzie (1995), Scott (1999), Ito et al. (2001), Norris (2001), Castell (2001) and Millward (2003).

A counter to social isolation is the increasing acceptance of e-mail, which has become “virtually universal among users”, according to an Australian Department of Communication, Technology and the Arts (DCITA 2000) report that e-mail is a regular part of life worldwide, with the intensity of Internet use by Australians among

the highest in the world—rated 6th—despite its relatively small population. E-mail, the communication third of the ICT acronym, is the facility which is reported to be the most used by older adults learning to access the Internet, DCITA statistics showing, for example, that e-mail use accounts for 98% of Internet use by Irish Internet users and 87% by Singaporeans. A similar situation is noted in an American National Telecommunications and Information Administration (NTIA 2000) survey finding e-mail to be the Internet's most widely used application with 79.9% of Americans using Internet.

Scott (2001) quotes from an Australian Centre for International Research on Communications and Information Technology (CIRCIT) research paper that “e-mail can provide a third communications channel of national significance comparable to that of postal mail and the telephone”. An intergenerational comparison from DCITA (2000) shows that while younger Australians are the biggest Internet users, the fastest rate of growth in the number of adults accessing the Internet is occurring among older adults. Around 80 per cent of adults aged between 18 and 24 years of age are Internet users, while 16 per cent of persons aged 55 years or older accessed the Internet (ABS 2000).

As mentioned in Chapter 1, the statistics of the ageing of the world populations indicate that even though both men and women are living longer into eventual frail old age, women still outlive men resulting in increasing numbers of women living alone. Women, who are usually the carers in society and following the death of a spouse or close relative, are often isolated as they lack physical mobility and are prone to social isolation. The possession of computing and Internet skills is a hedge against such isolation for many older adults and a preventive measure to ward off loneliness and depression.

SUMMARY

There is a significant emphasis in the literature reviewed on a wide range of inequities and barriers to ICT access, which are simplistically referred to as digital divides.

Some of the associated myths are discussed as well as arguments suggesting that there is an over-emphasis on the extent and significance of many of the divides.

Researchers are not all in agreement that, in the developed world at least, any or all of these deterrents actually inhibit the uptake of new technology by the persistent older

adult who has needs, interests or aspirations. Some researchers deny the existence, extent or number of divides, implying that the solutions are not so much within the capacity of gatekeepers but rather the responsibility of the older age group itself.

This section also looked at a range of factors that foster or inhibit ICT literacy acquisition by older adult learners as they experience the rapid technological changes referred to in Chapter 1. Some of the barriers include cost of hardware, software and Internet connection, literacy problems in using text-based programs, age related impairment and the danger of ICT causing rather than alleviating social isolation. The rise of the acceptance of e-mail as a preferred method of communication with family and friends has seen a change in the dominance of negative views expressed above. The next section explores some of the training and support options that are available to older adults learning to access new technology in retirement.

RESEARCH QUESTION 4

What are the ICT training and support implications for older adult learners, trainers, service providers, researchers and policy makers?

INTRODUCTION

This section introduces some of the ICT training and support issues and implications for older adult learners in the longer lives now stretching ahead of them or, as Jarvis (2001, p.5) puts it, in the “long leisure years that confront retirees”. Seminal adult learning theory and research writings and the principles informing adult education practice are viewed from both third age and new technology perspectives. Literature about lifelong learning in a technological environment is reviewed as it relates to older adult learners, facilitators of older adult learning, policy makers and the wider learning community.

THE ADULT LEARNER

Knowles (1991) stresses that there is a need to explain why specific things are being taught, that instruction should be task rather than memory oriented and should allow learners to discover things for themselves, with guidance and help provided when mistakes are made. Knowles advocates that learning activities should take into account the wide range of different backgrounds of learners and learning materials and should allow for different levels and types of previous experience. Knowles further states that, since adults are self-directed, they need to be involved in the

planning and evaluation of their instruction and are most interested in problem-centred rather than content-oriented learning that has immediate vocational or personal life relevance. These general adult learning principles can be readily transferred to the adult learner and ICT.

Manheimer, Snodgrass and Moscow-McKenzie (1995, p.170) predict that if the problem of fear of competition with younger students is overcome, and concerns about the fast pace in formal, structured classes are removed, a growing number of older adults can be expected to learn computing skills and “thereby expand their own educational opportunities and capacity to contribute to an increasingly electronic world community”. Manheimer, Snodgrass and Moscow-McKenzie claim that as the number in the third age increases, along with an interest in education, the continuing development of knowledge about the older learner will assist institutions of higher education in planning, as also suggested by Jarvis (2001). Buys (1998) sees implications for training providers and for those giving support, in aiming to match training and support provision to the needs of new users of technology. She suggests that an understanding of how seniors learn by interacting with the Internet will enable more effective training programs and support services to be developed. Cornford (2000, p.10) suggests that:

there appears to be irrefutable logic that there is a need for lifelong learning in a world requiring continual adaptation and learning. It also seems logically irrefutable that lifelong learning can only be really effective if individuals are taught how to learn and process information in truly effective ways.

Researchers agree that older adults can acquire new knowledge and learn new skills throughout life (Williamson, Bow & Wale 1997; Swindell & Vasella 1999; Foskey 2001). There is also agreement that older adults are at least as heterogeneous as any other lifespan age-stratified group. Frieden (1993, p.82) maintains that “older people do not become more alike by becoming old . . . in many areas, they become more varied”. In linking third age learners and ICT, Ito et al. (2001, p. 17) suggest that while older adults are not an homogenous group, nor are Internet destinations.

Knowles (1991) and MacKeracher (1998) are among the many theorists who were early to recognise not only the extent of adult variability, that is, that there is no generic adult learner. Knowles (1991) claims that adult learners are self directing—

that they derive positive benefits from experience, possess great readiness to learn, voluntarily enter an educational activity with a life-centred, task-centred or problem-centred orientation to learning and also that they are internally motivated. Tight (1998) and Jarvis (2001) dispute this claim, as mentioned earlier in the section on motivation, as they assert that the voluntary nature of learning in later life, as at any other time in the life span, is arguable and that motivation to learn depends largely on the needs, interests and aspirations of the individual in any given work related, study or leisure situation. Candy (2004, p. 4) brings a digital-age perspective to the discussion as he contends that:

self-directed learning is one key way in which people keep up with change and, since we are currently experiencing an unprecedented level and pace of change on a global scale, it is plausible to expect the demands of a changing world to lead to greater amounts of self-directed learning.

Knowles (1991) popularised and arguably polarised opinion about andragogy, which is the most well known and discussed of a plethora of subsequent 'gogies'. Jarvis (2001) cites two late seventies' contemporaneous US adult learning theories, Lebel's (1978) gerogogy and Knudson's (1979) humanagogy, relating to third age learning and lifelong learning respectively. Battersby (1987) also explores the concept of gerogogy and a decade later, Hase and Kenyon (2000, p.3) suggest there is benefit in moving from andragogy towards the concept of heutagogy, which they define as "truly self-determined learning". They report that heutagogy builds on humanistic theory and approach to learning, which was described in the 1950s, and is appropriate to the needs of learners in the twenty-first century, particularly in the development of individual capability. Hase and Kenyon see heutagogy as looking to the future in which knowing how to learn will be a fundamental skill, given the pace of innovation and the changing structure of communities and workplaces. Nasseh (1998, p.12) uses the term techagogy to describe the art and science of learning in technology-based education. Nasseh suggests that techagogy is an effective model in an environment that is based on "digital communication, digital collaboration and digital resources for cognition", is independent of time and place and is a student-centred and outcome-oriented model. Nasseh cautions that both teacher and student must have adequate competence and technology skills in order to utilise, operate, develop and participate in this technology-based learning model.

This timely warning has implications for presenters of online learning for third age learners, many of whom left formal education at an early age, and require the ongoing actual or virtual support provided by informal community groups. Candy (2004, p.2) examines the support that may be provided to self-directed learners in what he considers to be the various elements of the online learning process—interlinked yet needing different approaches and solutions:

- engaging with online learning;
- locating information and resources;
- evaluating the quality of digital resources;
- assimilating information;
- reconceptualising understandings; and
- networking.

These components are all considered in varying degrees in the discussion as they relate to the generally independent third age learners in this study who use ICT to “help them meet a purpose, achieve a goal or learn how to use computer-based technology” (Taylor & Rose 2004) to enrich their own and others’ lives in their personal circles or the wider learning community.

THE LIFELONG LEARNER AND ICT

A distinction needs to be made between learning about and how to use computer-based technology such as proprietary application software, e-mail and intermittent Internet surfing, and mastering complex aspects of ICT in order to more fully use the full gamut of learning opportunities available via access to the Internet. There are more than sixty online access centres in Tasmania, which are sponsored by the Federal Government initiative, Networking the Nation. While these public online facilities cater for all ages, there is a predominantly older adult clientele (Millar & Falk 2000).

Clark (2004) draws attention to a commonly held assumption that online access is good for gathering information, but in agreement with Greenfield (2000), he suggests “this may contribute to a decline in higher order thinking processes such as critique and evaluation”. Greenfield (2000, p.15) points out that information is not knowledge, as she deplores the googalisation of the modern world and the ‘in-your-face’ visual and auditory Internet images. Paul and Stegbauer (2005, p.3) reinforce

this argument as they comment that the current debate too often equates information with knowledge. They contend that information is not the problem for older adult learners, “but rather its interpretation and its re-framing in a personal and social context”.

THE OLDER ADULT LEARNER

Matching teaching and learning strategies to individuals’ learning styles is a recommended, but rarely observed practice in most formal educational settings. In this regard ACE [Adult Community Education] has been very successful with older adults. (Clark 2004, p.33).

Scott (1999) stresses the inadequacy of ‘one size fits all’ education programs (Wickert 1989), particularly when introducing complex new technology. Warburton (2004) also decries this simplistic compartmentalisation, adding that such programs have often met with “poor results and lost resources”. King (1997) writes that the difficulties older adults experience in using computers can be reduced by such strategies as step-by-step learning, sensitive remedial help, self-pacing, frequent breaks, good lighting, larger print, small class size, and sufficient time allotted for tasks and for practice of new skills. Taylor and Rose (2004) reinforce these findings stating that older learners often need more time and more repetition before they fully own the new information or skill. Burns (2002, p.289) cites Cody, Dunn and Hoppin (1999) who maintain that if older people are introduced to computers in a non-threatening environment, are allowed longer time to learn, with more pauses, opportunity to ask questions and plenty of hands-on self-paced practice, most cope well. King (1997, p.3) suggests that:

in order to assist older adults to become virtual learners, those who work with them need to address the concerns seniors have about learning technologies, and provide equitable computer and multi-media learning opportunities for the curious and capable in this population group.

Mott (2000) acknowledges that research into learning that matches the special needs of older adults holds both theoretical and practical implications for training and support provision. Clark (2004, p.149) suggests that the delivery of learning for older people requires “different approaches when compared to the training required for younger people”. He stresses that this is especially important if older learners need to

acquire skills they have never used or encountered before as, for example, new technology. Jarvis (2001), on the other hand, declares that older learners as students do not need different teaching methods, but that they do need to be able to apply their knowledge and skills. A section of a European U3A website, ULM (2004), which is devoted to teaching computer skills, differentiates between knowledge-based learning that can be taught and skills-based learning, which has to be learned.

Millar and Falk (2000) find that the majority of the older adults in their research study require ongoing help and support. The participants report that the biggest difficulty is the lack of straight forward instruction manuals about computer jargon suitable for older persons to understand. These comments are echoed by Foskey (2000), who quotes an older rural online learner who deplores the lack of printed manuals and the confusing abbreviations used by experts in the computer related topics. Referring to learning new technology, researchers stress the importance of initial success in learning to use a computer as a way to combat older adults' technical alienation (Morris 1994; Redding, Eisenman and Rugolo 1998). These findings are reinforced by MacKeracher (1998), who warns that positive feedback should be immediate and preferably well before the end of a training session for greatest benefit. Burns (2002, p.184) describes how mastery over even a limited and simple task, such as the first paragraph typed on a word processor and printed, creates a sense of competency and is intrinsically motivating to a beginner. Redding, Eisenman and Rugolo (1998) summarise much of the previous discussion as they maintain that most older adults will be successful in learning-in-retirement programs where the organiser or facilitator has a practical understanding of adult learning theory and has a sincere desire to ensure that each student experiences success in achieving individual goals.

Clark (2004), in a comprehensive report on his research into Adult Community Education in Queensland, suggests that this generally reflects the state of informal and non-formal learning in other Australian states. He writes that a decline in publicly funded education and the demographic changes discussed in Chapter 1 in this thesis are leading to a higher incidence of user-pays training. This has implications for third age learners, particularly older women, who exist on fixed—usually low—incomes and dwindling savings, and points to a tendency towards lack of availability of third age ICT training provision bordering on elitism.

THE TRAINER OR FACILITATOR

There is some disparity between the expectations by different theorists and researchers of the requirements for a facilitator of learning for older adults. Redding, Eisenman and Rugolo (1998) place enthusiasm at the forefront of the attributes required. Brookfield (1986) states that the facilitator needs to intervene more rather than less. Jarvis (2001, p.59), on the other hand, points out that older adults may be more experienced than the teacher—therefore a didactic Socratic and facilitative mix is advocated. Burns (1995, p.268) makes a distinction between didactic and Socratic teacher-centred learning and facilitative learner-centred approaches. Burns posits that the didactic approach in facilitator-lead teaching is just that, with students led along a “particular line of questioning”. He contrasts this with “facilitative teaching”, where the facilitator creates the conditions where learning can take place. MacKeracher (1996, p.6) states that learning occurs both “normally and naturally”. She is of the opinion that “the basic problem confronting any facilitator is not how to motivate learning ... but rather how to avoid setting up disincentives and obstacles which retard, block, or de-motivate learning”. Knowles (1991 p.75) cites Houle’s (1972) composite picture of the ideal helper:

the ideal helper is warm and loving. He accepts and cares about the learner and about his project or problem, and takes it seriously. He is willing to spend time helping. He is approving, supportive, encouraging, and friendly. He regards the learner as an equal. As a result of these characteristics, the learner feels free to approach this ideal helper, and can talk freely and easily with him in a warm and relaxed atmosphere.

This quote, although idealistic, exemplifies much of the interaction experienced in the ACE, Adult Community Education sector, in particular where peers by age or interest are engaged in the training and support of third age learners.

THE POLICY MAKER

ANTA (2003, p.5) in its national strategy for vocational education and training 2004-2010, makes a case for investing more resources in skills, stating that increasing labour market participation has been identified by the Commonwealth Treasury and industry as “one of Australia’s key economic challenges”. As the number of people in the third age grows daily, and will continue to do so until the ‘baby bust’ slows the flood within the next decade, those now planning to enter the third age have little

choice but to postpone retirement from what is predicted to be a depleted workforce. ANTA (2003) forecasts that as the baby boomer generation reaches the traditional retirement age, Australia will need as many older people as want to do so, to remain in the workforce or retrain for return to it, a possibility suggested in a Tasmanian Seniors Bureau (2005) discussion paper. This would appear to indicate that ICT training and support of the third age may lead to a shrinking at the lower end of this group as the need increases for older adults to continue or return to full time or part time second age employment. There is at least a generation who will need this training before the 'digital natives' are established in what is already shaping to be a very different (digital) workforce from today's. The report also reinforces the importance of lifelong learning as a strategy to minimise pressure on gross domestic profit.

Martin (2000, p.1) offers a Scottish view as he asks how we cope with "sudden official enthusiasm for causes we have long espoused?" In commenting on the explicit politicisation of lifelong learning as 'learning for democracy', Martin warns that when governments become interested in lifelong learning, "it is as well to be cautious; when they add active citizenship and social capital inclusion to the list, it may be time to be positively sceptical—not to say suspicious". This somewhat cynical view may well be based on the discrepancies between the second age rhetoric in green and white government papers and glossy policy documents and the funding made available for the third age segment of the lifelong learning continuum. Jones (2002, p. 22) contends that government attention and spending has been skewed disproportionately toward the minority fourth age of decline, smoothing the pillow and easing the passing rather than funding the revving up and plugging in of the increasing numbers in the majority third age of active retirement. Withnall (2006), on the other hand, notes that people may move in and out of this fourth stage of lessened activity rather than descend into total dependency and warns against ignoring the potential of continuing lifelong learning into the fourth age.

A Tasmanian Government paper *Our Future: Towards Positive Ageing* (1999) acknowledges the advantages of lifelong learning in later life, including the benefit of continuing education in helping people adapt to "the rapid changes that are occurring in our society"(p.16). The rapidity of the changes taking place constantly was

mentioned in Chapter 1 as the forecast about change (Faure 1972) was noted and also the interest in the rapid technological advances by later 20th and early 21st century researchers including Candy (2000, 2004), Faris (2002), Adler (2002), Foskey (2002) and West (2003a). A Tasmanian Education Department (2003) post compulsory education strategy document delineates the place of lifelong learning in its vision for a learning community.

Learning communities are created and sustained where people share a commitment to fostering lifelong learning through collaboration and recognise learning as a means of achieving broader social, cultural, economic and environmental goals.

The Tasmanian Seniors Bureau discussion paper *All Ages: All Tasmanians Together* (2005) acknowledges that “technology can help older people maintain or increase contact with family and friends, thus supporting continued independence and decreasing social isolation” and asks what can be done to help older people take full advantage of new technology?

SUMMARY

This section reviewed literature relating to the thinking of theorists and researchers about training and support issues and implications for stakeholders and gatekeepers. The focus moved from the adult learner and the lifelong learner to the older adult learner accessing new technology. The role of the trainer or facilitator was explored and the rhetoric of the policy makers was touched on as it impacted on post-compulsory adult community education.

The implication here for policy makers is that there is a continuing interest by government bodies who see a clear need to ensure that older adults are given the opportunity to acquire ICT literacy in order to function in the technological knowledge society. The focus in this thesis is on ‘third age’ learning, implying a group of active elderly (Paul and Stegbauer 2005) men and women with prospects of long retirement years stretching ahead. There is increasing need for vocational as well as recreational ICT training and support for the ‘young elderly’, those older adults aged between 55 and 69, who wish to postpone their retirement or return to the paid or volunteer workforce. The population ageing demographic in Tasmania already indicates that not enough ICT literate adults will be available to fill the

expected job vacancies due to the fewer numbers of workers available to fill the gaps left by retirement and the baby bust referred to in Chapter 1. There is an urgent need to harness the experience of third age learners by providing appropriate and affordable training and support, whether the ensuing ICT literacy is used for personal enrichment or in the paid or the volunteer workforce. It is vital that all concerned are aware of the needs of third age learners and understand how to facilitate their uptake of ICT.. The contribution of older adults to the economy through volunteer effort is considerable.

RESEARCH QUESTION 5

How do the skills, knowledge and information gained from accessing computer technology, add to community social capital?

INTRODUCTION

Ferlander (2003) synthesises definitions of social capital referring to social networks, social support and trust, as essential elements. She also distinguishes between various forms of social networks. Ferlander pays tribute to Putnam (1993, 2000, p.67) as she lists horizontal and vertical networks, formal and informal networks, strong and weak ties, bonding and bridging networks and local and non-local networks.

Kearns (2005) suggests that information and communication technology is opening up new ways to build social capital and community, but warns that concerted strategies will be needed to harness these resources for community learning. This section relates the human capital generated by volunteer involvement in retirement with the social capital that binds communities together. Kilpatrick (2002, p.1) provides a link between learning and social capital as she writes that “communities are places of shared territory, places where we interact with others”. The third age lifelong learners who offer their ICT skills in a variety of community service placements are an integral part of the networks that make up learning communities.

Older adults in the third age of active retirement are arguably more diverse than any other age group across the lifespan (MacKeracher 1998; Withnall 2000a; Mitchell 2002; Clark 2004). For this reason, the human capital generated by the interaction of third age learners with different aspects of ICT at different levels and complexities, adds substantially to community social capital.

DIVERSITY OF INTERESTS

The Internet is a medium of choice, diversity, and interactivity, writes Stoecker (1998) in a paper that questions whether the Internet is a Titanic or a lifeboat, an includer or an excluder. He argues that on the Internet you can choose not only what information you want, but when you want it, that a broad spectrum of standpoints is represented and, on the Internet, information can flow multi-directionally. The indiscriminate gathering of information rather than establishing a knowledge base is decried by Greenfield (2000), however, Scott (1999) reinforces Stoecker's statement that the user can interact with the medium, being an information provider as well as a receiver. This is particularly relevant to health websites, which not only contain easily understood information, but also invite participation in online surveys that add to the body of grass roots health knowledge.

HEALTH RELATED ISSUES

Withnall (2000a, p.88) refers to a 1999 U.K. white paper, which extols the benefits accruing from learning, and claims that "research has shown that older people who continue to be active learners enjoy healthier lifestyles and maintain their independence longer than those who stop learning". King (2004) quotes an Institute of Health and Welfare Report that states that seventy percent of people over 64 have good or excellent health, and that seventy-five percent of old people are living independently.

Onyx and Leonard (2000, p.114) contend that in viewing volunteering as a social capital generating process, the value of volunteering, particularly for women, will be more accurately recognised, not only just for the obvious outputs, meals, caring or fire protection, but for improving the "efficiency of society by facilitating coordinated actions". Beauchamp (2004) contends that volunteering can help to alleviate loneliness and depression that stems from the social isolation experienced by people who feel they are disengaged from society. That loneliness and a sense of lack of purpose can lead to mental illness, particularly depression, as well as physical health problems, is reported by Swindell and Vasella (1999), White, McConnell, Clipp, Bynum, Teague and Navas (1999) and Foskey (2001).

Wolff (2003) advocates the learning for individual health by older adults to reduce the human and economic burdens of chronic ill health. He stresses the importance of a

healthy diet, physical exercise and the absence of loneliness. Wolff also cites a need for the purpose described by Manheimer, Snodgrass and Moscow-McKenzie (1995) as a reason for getting up in the morning. Wolff (2003) contends that programs of information and education can change the “elderly’s knowledge, attitudes and actions” (p.82) and can help ensure a healthy and productive old age. He further suggests that self-enrichment leads to increased interactions among the elderly and enriches the whole fabric of public life. Wolff considers that learning for self-enrichment can also be a path leading towards an increased role of the elderly in the community and in the labour market. He argues that “learning can mobilize the elderly as a resource to strengthen communities and families and to enhance social cohesion” (p.83).

Falk and Kilpatrick (1999) suggest that there are benefits to communities, regions and the nation from an active, learning population and that emerging evidence shows that active and learning older people not only contribute to society directly, but also contribute indirectly by easing the economic cost of health care and associated services such as home-based care. The importance of the acquisition of ICT literacy to community social capital is considered by researchers such as Falk, Golding and Balatti (2000) and Warburton and Bartlett (2004) to be two-fold. Firstly there are savings to government in improved health and well-being generated by these older adults who are mentally stimulated by access to new technology. Secondly there is the significant amount of voluntary community service provided as a result of this new ICT learning. Beauchamp (2004) links these two arguments as he reports the World Bank argument that the social capital generated by volunteering makes an important contribution to the prosperity of society and to the development of community sustainability. In short, there is a strong economic justification for a public investment in lifelong learning of the elderly and therefore, in this technological age, in promoting ICT literacy for third age learners.

VOLUNTARY COMMUNITY SERVICE

The 2001 International Year of the Volunteer helped to raise the profile of volunteers, many of whom reside in the third age. The Australian Institute of Health and Welfare, AIHW, (2002, p.16) states that older people surveyed in three age groups, 55-64, 65-74 and 75 and over, make up 12% of the population, but contribute 25% of the total

hours of voluntary work. The number of volunteers in the five years to 2000, increased in each of these groups by 50%. AIHW reports that people older than 55 have different reasons for volunteering than the rest of the population. The most commonly nominated reasons for men and women in the older age groups to become volunteers are, in descending order:

- helping others in the community;
- personal satisfaction;
- doing something worthwhile;
- social contact;
- to be active; and
- religious beliefs.

Elsey (1993) notes the combining of volunteer effort with adult education in the debate on the shifting focus between the individual and society, describing the combination as a third way to activate personal empowerment and social change between the government and the free market. Elsdon (1995, p.80) contends that “voluntary organisations are about individual learning and change, about empowerment to fulfil one’s potential, and about mutual caring”. He further suggests that voluntary activity has a twofold *raison d’être*, empowering the individual through participation and learning as it renders service. He also finds that while there may not be stated learning objectives, much volunteer effort results in invisible outcomes (Bingman 2000) such as personal growth and increased self-esteem, which are derived from the development of inter-personal skills.

Adler (1999, p.5) observes that as older adults move from a “disenfranchised old age” into a healthier and more active retirement, they are finding a way to stay connected to their communities through volunteerism. Barnett (2002, p.10) points out that the push for early retirement in the past two decades has resulted in communities having “a large resource of experience and skills at the ready”. He advocates national creative thinking to “harness the untapped potential and experience of our seniors”. A substantial proportion of participants in both adult learning programs and volunteer effort are third age learners who join peer or mixed age groups, often learning a range of new skills. Falk, Golding and Balatti (2000, p.60) describe a situation that is often reported in research studies:

many older people who began as ACE students are now making a voluntary commitment to helping others including serving on the Management Committee and one-to-one teaching of the less mobile or others in need.

It is generally agreed that there is now a need for preparation for the longer retirement years that come with increased longevity. Adler (1999) stresses the fact that “the highest increase in volunteerism is in the ranks of older adults demonstrates they want a meaningful role in society”.

Given the number of younger and healthier retirees today, it is important that we promote the idea of productive ageing (Narushima 2000, p.1). She adds that “volunteering is a key element in this endeavour . . . community volunteering is one of the hot spots in adult learning which should be more fully studied in the light of lifelong education”. Narushima applies the adult education theory of transformative learning (Mezirow 1991) to the study of ageing to help make meaning of the process identified as adult development. Narushima also relates the theories of later life learning with helping to understand the extent and nature of informal learning within community volunteering. ANTA (2003, p.6), in mounting an argument for vocational training and re-training throughout the lifespan, notes that the number of white collar jobs, which increasingly require ICT literacy, has overtaken that of blue collar jobs and predicts that community service and leisure-related jobs will continue to grow strongly as will volunteer involvement.

Jones (2002, p.29) notes that volunteers “keep many social amenities and community facilities going” and advocates the recognition of the practice of volunteerism in policies for the third age. Falk, Golding and Balatti (2000, p.vii) make a comprehensive assertion that ACE sector learning—which in this study is synonymous with ICT learning:

generates social capital, builds lifelong learning, channels the work of volunteers, augments social cohesion, citizenship and democratic participation, and improves the health of individuals and thus communities.

Falk, Golding and Balatti (2000) sum up the arguments for the education of older people as they identify reciprocal cost benefits from such investment. They write that there are direct savings for individuals, the community and governments from

promotion of wellness and note the direct and indirect contribution to society that is made by people with increased social and intellectual capital information.

The implication for policy makers is the importance of providing resources for the computer and Internet skills training needed in all spheres of contemporary community volunteer involvement. Training and support is needed for both older adult ICT learners and trainers who provide many hours of volunteer service in the community.

Networking is particularly important in the formation of social capital. It helps form the 'glue' that holds communities together and is a major enabler of the non-formal learning that is the hallmark of communities rich in social capital". Faris (2002, p.7)

Cox (1995) describes social capital as social fabric 'glue', while Falk, Golding & Balatti (2000, p.vii) write that social capital is the "cement of society's goodwill – it creates a cohesive society". The 1999 International Year of the Older Person (IYOP) had as its theme "A Society for All Ages". This intergenerational concept of lifelong learning is the warp on which the multi-coloured and multi-textural human and social capital weft threads are woven into a socially cohesive learning community fabric. The focus in this thesis is on both formal and informal ICT learning interaction in the third age and includes the benefits accruing to the learners and the peer trainers and supporters, families and strangers through volunteer involvement in the community.

THE LEARNING COMMUNITY

Faris (2004, p.1) suggests that learning communities are off springs of lifelong learning, while Martin (2000) states that there appears to be an equally important symbiotic relationship between social capital and lifelong learning as there is between human and social capital. Knowles (1991, pp.171–172) proposes that any social system can be conceptualised as a "system of learning resources" or more specifically, a lifelong learning resource system, which he equates with a learning community.

Knowles offers a learning community model based on assumptions including that:

- learning in a world of accelerating change must be a lifelong process;
- the purpose is to facilitate the development of the community;
- learners are highly diverse in their experiential backgrounds;
- resources abound in every environment;

- people who have been taught in traditional ways need help to become self-directed learners;
- learning is more efficient if guided by a process rather than a content structure;
- learning is enhanced by interaction with other learners; and
- learning is a process of active inquiry with the initiative residing in the learner.

Knowles' (1991) learning community assumptions have particular relevance for the third age learners in this study, as a basis for discussion by ICT training and support stakeholders. The implication contained in the last item listed above, for example, is arguable as Jarvis (2001), in the Research Question 4 section above, challenges the placing of the onus to become a lifelong learner on the 'supposedly' autonomous learner.

The juxtaposition of lifelong learning with the rapid and inexorable technological change forecast by Faure (1972) is referred to in the section on change and choice in Chapter 1. This has ICT training and support implications for learners and trainers as the learners are encouraged to make their learning needs known and the trainers facilitate the learners' journeys towards self-directed process-driven learning. There are also implications for NGOs and policy makers as the ideal learning community group is developed, where learning is fostered and enriched by social contact and diverse experience is recognised and respected.

The UNESCO (Delors 1996) report, which outlines some of the considerations that need to be addressed in looking at communities, established the Four Pillars of Learning, how they function, and what impact they have on society. Delors' four pillars, learning to know, learning to do, learning to be and learning to live together have implications for the third age ICT learners in this study. The acquisition of ICT literacy involves both learner and trainer in thinking skills, learning by doing, the development of a holistic learning approach and the social capital trust and bonding that occurs in the informal learning community networks. The report by the UNESCO Task Force on Education for the Twenty-first Century (Delors 1996) declares that the learning throughout life concept advocated by Faure (1972) must be re-thought and broadened to adapt to the challenges in a rapidly changing world. The bulk of the training and support examined in this study is in the fourth ACE, adult

community education sector in organisations and self help groups where the entry age for participation is fifty years. Many of these groups are run by peer age volunteers, however, the available resource material is often geared for young people as reported by USA SeniorNet's Wrixon (2001). SeniorNet, Elder Hostel, U3A and other seniors' computer training providers such as the Computer Centre featured in this study, write material suitable for older adults. SeniorNet nominates lack of pressure and a friendly non-competitive supportive environment as important factors in keeping older adults motivated to learn new technology skills.

ANTA (2002) reports that communities in rural and regional Australia are confronted by many challenges, particularly as we move towards a globalised knowledge economy and that some communities are focussing on learning to promote social cohesion, regeneration and economic development. Kilpatrick (2002, p.1) comments that community learning is about "people combining their knowledge and skills to achieve a mutually beneficial outcome". Learning is a complex process that goes beyond simple acquisition or creation of new knowledge and skills. Newman (1999, p.85) suggests that learning has a transformative aspect, which has to do with understanding values, ideas and pressure from peers that constrain the way we think and act. Kilpatrick (2002) identifies formal community leaders as key players, but acknowledges that others in community networks, people termed 'boundary crossers', who speak the language of the different groups or institutions and the broader community, are also important.

Falk and Harrison (1998, pp.19–20) state that a whole community that displays the characteristics of community learning is referred to as a learning community. This wider view adds another ingredient to the learning community concept, that of networks, which may be actual or virtual. Falk, Golding and Balatti (2000, p.v) suggest that as we move about in a web of 'elastic networks' connecting home, work, learning, leisure and public life, "the interactions that give our lives their distinctive 'sociocultural landscape' are the same interactions that create social capital, the social infrastructure support for our lives. Falk and Millar (2002) nominate the role played by purposeful and appropriate networks in transferring literacy learning to other life settings. This brings a social capital perspective into the discussion as a trust in self

and a trust in the tutor is seen as a bridge between informal community learning and formal learning processes.

SUMMARY

The diversity of the third age cohort was highlighted in this section as was the transfer of human capital to social capital deposited in the learning community bank. The third age is shown to be an age of active and productive retirement adding considerably to community social capital through volunteer effort. This contribution is not included in NGO financial statements nor does it show in GDP checks and balances, but it is claimed to more than outweigh any social service cost to the community (Jones 2002; Barnett 2002; Oppenheimer 2005). There is a need for research, although outside the scope of this thesis, to assess both the human capital cost to older adult volunteers and the social capital value to communities as the doom and gloom prophecies of future third age dependency on the young, proliferate. However, it is clear that up-skilling older adults to be effective in an ICT-dominated society will have benefits that extend to the wider community.

CONCLUSION

This chapter reviewed literature that ranged over several decades of theorising, research and discussion about adult education, lifelong learning, longer life learning, supported and independent learning in later life, that is, third age learning. The transfer of adult learning concepts and the application of theories of ageing to the new learning required in the acquisition of ICT literacy in retirement, are noted. Early and later and non-adopters of ICT were recognised. The acquisition of ICT literacy in later life was equated with second language learning (Prensky 2001; West 2003b). Cognitive ageing was acknowledged to be an issue affecting older adults' learning as were early childhood experiences, which were also suggested to be possible opportunities for further research.

The pockets of human capital engendered in the many ACE programs spread and join as community boundaries are crossed, the implication being that in addition to the documented contribution, there is much potential social capital value on offer to those communities that foster rather than inhibit or ignore their third age learners. The close connection between human and social capital and the potential for education and self-improvement in the adult and community education sector is identified in everyday

situations: in the home, in the workplace, in pubs and clubs—in the great good third places described by Oldenburg (1997). These third places are also referred to by Falk, Golding and Balatti (2000) as places where people gather for a common purpose away from home and work. They also observe that much of this learning occurs outside formal learning institutions and contend that lifelong learning is closely associated with the formation of social capital and community capacity building.

There is increasing justification for the research which is the focus of this thesis about the need for appropriate and affordable ICT training and support for the many older adults who are actively seeking this in retirement. Chapter 3 reviews literature about the history of the methodologies chosen in this study and describes the research design, the sample characteristics and recruitment, and the methodology employed.

CHAPTER THREE: METHODOLOGY

INTRODUCTION

Methodologies used in studies about third age learners accessing new technology were reviewed (Hazzlewood 2001) and methodology literature itself was searched to identify research methodologies that would provide the best way to gather data about the diverse group of older adults of interest to this research study in order to answer the research questions. The methodology chosen is introduced with a synthesis of literature relating to the history of alternative quantitative and qualitative research paradigms. An outline of the research design and the justification for its employment are given. The sample size and characteristics of participants and the methods used in recruitment are described. Data gathering methods and data analysis approaches are detailed and ethics issues addressed. A reference is made to the implication of doing research in one's own organisation, given the close connection between the researcher and the major participant observation site.

WHY QUALITATIVE RESEARCH?

A naturalistic qualitative study design, which emerged as appropriate from a survey of the genesis and development of qualitative research, is employed in this study. My journey from early objective quantitative statistical to current subjective qualitative studies broadly parallels the historical development of qualitative research itself during the twentieth century and into the first decade of this century. In outlining the stages from positivist quantitative, noting that some qualitative methods are positivist, to the interpretivist qualitative, Hatch (2002, p.1) draws on Denzin and Lincoln (2000) as he provides an outline of qualitative research methodology during its evolution within the past hundred years:

- the 1900 to WWII 'traditional period';
- the WWII to the mid 1970s 'modernist phase';
- the 70s and 80s 'moment of blurred genre'; and
- since 1985, skirting the paradigm wars, a 'crisis of representation'.

Denzin and Lincoln (2000) state that "qualitative research means different things in each of these periods or moments" (p.3). Glimpses of the elements that make up qualitative research today can be seen as its history unfolds via different disciplines.

The traditional period had its origin in anthropology as the early solo ethnographers such as Margaret Mead employed observation, interview and artefact collection. This trilogy of approaches equates with the qualitative participant observation, semi-structured interview and document analysis employed in this study. The naturalistic approach to the world developed during the traditional pre-WWII period, as the Chicago 'slice of life' sociology researchers used the whole city as the setting and the participants' own words in their reporting. This concept is similar to this research study in that a slice of life is observed, in this case in a computer club for seniors, hereafter referred to as the Computer Centre, which may be viewed as a microcosm of the 'whole city', inhabited by the participants recruited.

Sociology contributed to the formalisation of qualitative research in the modernist phase as an attempt was made to combine the positivist approach of validity, reliability and generalisability with the interpretivist alternative truth seeking methods. The blurred genre phase, when boundaries between social science and the humanities were crossed as each discipline borrowed from the other, saw the emergence of interpretive methods. The naturalistic, post-positivist and constructivist paradigms gained power in the blurred genre period according to Denzin and Lincoln (2000), who write that qualitative researchers have "a full complement of paradigms, methods and strategies to employ in their research . . . the old positivist giving way to a more pluralistic, interpretivist, open ended perspective" (ibid. p.15).

This research theory and methodology blurring has its proponents as qualitative researchers adopt a 'cafeteria eclecticism' approach (Bright 1989), which was referred to in the section on theories of ageing in Chapter 2. The blurring of genres may be observed in this study as theories of ageing and theories of adult education are melded. Hatch (2002, p.5) suggests that "a new paradigm shift may be required to resolve the crisis of knowing and presenting the truth".

Whereas the quantitative research approach is characterised by objectivity, reliability and predictability, the interpretivist research method, according to Burns (2000) is a concept of subjective understanding. Qualitative inquiry has within the last forty years, emerged to stand alongside quantitative inquiry, despite a continuing quantitative versus qualitative paradigm war with staunch advocates for each extreme research concept stance. A third way is a balance between what may be considered to

be the hard quantitative line and the soft qualitative option as researchers mix and match methods. In this predominantly qualitative study there is an underlying, if understated quantitative strand as participants are counted and categorised and take part in two minor peer collaborative studies, one predominantly quantitative (Fraser 2004), the other employing a mixed quantitative/qualitative mode (Taylor & Rose 2004; Taylor, Rose & Wiyono 2004). These collaborative studies are detailed in Chapter 4 and detailed in Appendices C and D.

Gage (1989, p.5), in introducing his paper on the paradigm wars and their aftermath, looks to the future as he places himself in the year 2009 and offers several possible versions of the swing of the quantitative/qualitative pendulum. He expresses the hope that this polarisation will not result in one paradigm grinding the other into the dust but that rather “pragmatic philosophical analysis shows us the foolishness of these wars and the ways to an honest and productive rapprochement between the paradigms (p.5)”. Gage describes the arguments put forward by the anti-naturalists, the interpretivists and the critical theorists, as he attempts to reconcile the extremes of opinion and criticism that existed during the 1980s. Gage considers that the anti-naturalist argument—the scientific study of human affairs, including the notion making one-way causal links between teaching and learning—is impossible, that it renders the term ‘social science’ an oxymoron. Gage reports that the interpretivists were unable to reconcile their views on employing subjective interpretation of results—akin to political ‘spin control’—with the objectivity of positivist quantitative research. The critical theorists, according to Gage (1989, p.5) dismissed as trivial both the positivist tendency to measure anything that moves and the interpretivist approach exploring social constructions of reality. The alternative paradigm prophecies of Gage are outside the scope of this thesis, but present opportunities for a study of the ‘quanqual’ (Cropley 2002) paradigm balance, whether the arguments are polarised or insignificant.

One approach to qualitative research (Cresswell 1998), consists of presenting a problem, asking questions, collecting and analysing data and answering questions. Cresswell describes a grounded research approach where the researcher collects primary data, makes multiple visits to the field, develops and interrelates and categorises information, then writes a theoretical proposition or presents a visual

picture of the theory. Cresswell suggests that the emergent theory is articulated towards the end of the study as a narrative statement, a visual picture or a series of hypotheses or propositions. This is an example of a kaleidoscopic shift in the qualitative research story and of the flexibility of approach as proposed by Williamson, Burstein and McKemmish (2002). A justification of qualitative methodology is also given to researchers by Peshkin (1993, p.23), who assures them that what is to be learned does not necessarily involve a “theory driven, hypothesis testing or generalization producing” study design. Peshkin bases this assertion on a review of the literature documenting studies conducted by any or all of interview, observation or participant observation approaches. He categorises his findings under the headings of description, interpretation, verification and evaluation. In this study, these qualitative method attributes are aspired to in the description of the participants and the settings, the interpretation of the data gathered, the verification by cross referencing learners’ stories with those of trainers and mentors, in the noting of implications and the identification of opportunities for further research which are listed in Chapter 6.

The number of both quantitative and qualitative current and recent studies into the training and support of older adults who are learning to use computers to interact with the Internet has steadily increased. Later studies have moved from a strictly learner-driven andragogical approach (Knowles 1991) through a range of ‘blurred genre’ theories, some of which are discussed in the Chapter 2 literature review. Hatch (2002), in his treatise on qualitative research, comments that some researchers, whose strengths are visual and conceptual rather than mathematical and statistical, prefer to ‘go with the best fit’ for them. Others, Hatch observes, wish to use an action research method to bring about a change, such an aim being virtually forbidden in quantitative work.

Qualitative research was chosen for this study, not primarily for the reasons given above, but because while both quantitative and naturalistic qualitative methods have their place in my research journey, qualitative was considered to be the ‘best fit’ in this study to add colour, depth and animation to the data gathered. Quantitative data such as from the ABS and commercial polls, with their resultant statistical tables and charts, do not give more than stark simplistic two dimensional indications of the

numbers of older adults, for example, who possess computers and are connected to the Internet. Qualitative research approaches, such as those employed by Narushima (2000) and Hargittai (2002) analyse data to explore in depth the nature and extent of computer use and Internet interaction, rather than merely the length of time the equipment is turned on and Internet facilities are actually accessed.

INTERPRETIVIST RESEARCH

Williamson, Burstein and McKemmish (2002) set out a model for interpretivist qualitative research, which has as its starting point, a focal topic. In this research study, the focus is on issues and implications of ICT training and support for older adults in retirement. The study is inductive, in that it moves from specific data gathered from the sample participants, to a “working proposition rather than a hypothesis” (Williamson, Burstein & McKemmish 2002, p.32), however, it does seek answers to the research questions developed, as listed in Chapter 1. Williamson, Burstein and McKemmish state that the interpretivists use theory at various stages of their research and also acknowledge that a key interpretivist paradigm is constructivism. This study draws on ethnographic design (Burns 1995) and the interpretivist paradigm and is perhaps most closely aligned to a constructivist paradigm.

NATURALISTIC RESEARCH

The naturalistic qualitative research approach relies on “capturing naturally occurring activity in natural settings” (Hatch 2002, pp.26–27). This concept is further defined by Lincoln and Guba (1985, pp.226–247), who state that “the inquirer and the object of the inquiry interact to influence one another”. Lincoln and Guba include in their sequential checklist for naturalistic enquiry, the need for a paradigm to fit both focus and theory. They consider this requirement is essential in order to achieve the trustworthiness that replaces the validity and reliability checks in positivist quantitative research. Several measures are employed in this naturalistic study in an attempt to achieve trustworthiness. The purposive sample in this study, for example, includes a wide range, in both age and experience, of older adults who are actively seeking opportunities to increase their ICT knowledge and skills for a variety of intrinsic and extrinsic reasons. In using a modified grounded theory approach in this research study, I am mindful of:

- the theories of ageing and of adult learning which are reviewed in Chapter 2, and which underlie all aspects of this study;
- the ethical implications involved in conducting research in one's own organisation (Coghlan and Brannick 2001); which are discussed below; and
- the rigor needed to ensure that the opinions expressed by the participants are not coloured by my experience as an older adult third age learner accessing new technology myself.

THE RESEARCH METHOD

Ethnography, which is arguably synonymous with naturalistic inquiry, has its roots in anthropology but has become an accepted approach to evaluating programs in educational research (Patton 1990). Burns (2000, p.396) states that ethnographic projects are often divided into three phases, an initial broad exploratory phase, a second phase when "significant classes of events and persons begin to emerge" and a third phase when "the collection of data relevant to the reformulation occurs". The sequential steps leading to the research method employed in this study follow Burns' three-phase pattern. Analysis of the data gathered in the first phase, a naturalistic qualitative research project (Kilpatrick & Hazzlewood 2001) which preceded this current study, resulted in the identification of four broad typologies of computer and Internet use by older adults. The typologies identified in the first phase research are Window Shoppers, e-Mailers, Searchers and e-Seniors:

- Window Shoppers are novice technology users who lack home computers and Internet access. Window Shoppers need initial and ongoing support, are cautious about security, and plan to follow up training and support options;
- e-Mailers, who regularly send and receive e-mail, were introduced to the Internet by family or friends. E-mailers do some searching and future plans include training to match their interests and their available time and finances;
- Searchers, who started as e-mailers are competent computer and Internet end users. Searchers are in 'cruise control' on the Super Highway and some plan to extend their knowledge and skills, aspiring to advanced Internet interaction; and
- e-Seniors, who are confident and frequent users of multiple aspects of the Internet. e-Seniors have or plan to have home pages, have no hesitation in using online banking and shopping or returning to formal ICT or academic study.

An extensive search of literature about third age learners accessing new computer technology was the second preceding activity (Hazzlewood 2001). From this review (Appendix A), which included twenty 'core' papers for special study, themes emerged which enabled the focus to be narrowed and the development of the research questions that form the basis of the current ethnographic research project. The themes identified in the second phase literature review are:

- lifelong learning as it affects ICT acquisition;
- the effect of older adults' attitude toward new technology;
- factors fostering or inhibiting Internet interaction in later life;
- gender and age differences in ICT learning; and
- training and support issues and implications for a range of stakeholders.

In this current third phase research study, informed by the previous study and the literature review, data were gathered and analysed, issues were explored and implications for stakeholders and gatekeepers were noted as reported and discussed in this thesis. Gaps in research, which provide opportunities for further research, were also identified and listed. The narrowing of the focus during the preceding phases of the research project contributed to the development of the research design for this study.

THE RESEARCH DESIGN

Constructivism is an interpretivist paradigm which influences the choice of a research method. In essence constructivism most closely matches this study as the research design chosen encompasses all of the above qualitative attributes. The constructivist research design employed incorporates naturalistic, ethnographic and interpretivist qualitative elements as it gathers data from semi-structured interviews, participant observation, focus groups, case studies and document analysis as the experiences of a sample of fifty older adults are tracked over a period of a three and in some cases a four year period. Specific constructivist elements added to the basic qualitative formula are focus groups, case studies and a narrative inquiry method of recording some of the data analysis results.

The next sections outline the sample characteristics and recruitment and provide data gathering and data analysis details, which include filters used to categorise the participants into ICT end use experience and then peer interest groups. The site where

participant observation takes place is described and the ethical implications of researching in one's own organisation are discussed. Two peer researcher collaborative studies involving the sample participants in this study are described. Tables show sample participant categories by age, pre-retirement occupation, amount and extent of ICT end use experience and current 'adult literacy' level (Hazzlewood 2004), which is explained in the data analysis section below.

THE SAMPLE CHARACTERISTICS

In this study, the entry age of the fifty older adults in this study, is 50 years with no upper age limit imposed. This wide spread has been chosen, as although there is not a consensus among researchers about the significance of chronological age as a factor in third age ICT literacy acquisition, age was not found to be a limiting factor in the Kilpatrick and Hazzlewood (2001) seniors online research that preceded this study.

As in the previous seniors online study, sample selection was purposive, flyers inviting participation in the research study by men and women aged 50 and over, who were involved in formal or informal computer use and Internet access training programs or support groups. A combination of the following characteristics was sought:

- a mix of males and females;
- a wide third age range including baby boomers;
- a wide spread of technology expertise;
- ICT learners in formal and informal situations;
- both self-directed and supported learners; and
- a combination of learners and trainers

The sample consists of twelve older adult men and women from the Kilpatrick and Hazzlewood (2001) study, who are identified by asterisks in Tables 4 and 5, and thirty-eight older adult men and women recruited from a range of community organisations and ICT training programs. This blend enabled a comparison to be made between two time-points of extent and use of ICT by the participants observed over an extended period and also investigation of whether ICT entry is different between the two intakes. Twenty-seven of the sample participants, whose details are listed in Table 4 at the beginning of Chapter 4, give or receive informal ICT training and support at the Computer Centre, which is described below. The other twenty-

three sample participants, whose details are listed in Table 5 at the beginning of Chapter 5, are not connected with the Computer Centre, but are either independent self-directed learners or those who receive or have received formal or informal training and support. The sample includes 7 baby boomers aged between age 50 and 60. The sample also includes four baby boomer and one older adult, who act as mentors to other members of the sample group while they continue to learn about and via ICT technology themselves. The 7 to 3 female to male ratio (35 females, 15 males) in this study is not representative of this age group in the wider community, but this is not considered to be a major limitation in that this research study is about older adults and is not based on gender. A cross section of third age learners with a wide range of technology experience was recruited in an effort to avoid the possibility of bias.

RECRUITMENT OF THE SAMPLE

Ethics permission for the study was sought and received from the University of Tasmania's Social Science Ethics Committee (Appendix B). The sample was recruited by contacting participants from the Kilpatrick and Hazzlewood (2001) study, by placing flyers on seniors' community group notice boards and by promoting the research in actual and online community newsletters. Those who expressed an interest were telephoned and brief demographic and ICT use characteristics were ascertained. This information informed the decision to use 'filters' to segment the sample according to length of technology experience and membership of peer interest groups. This segmentation is described below in the section on coding filters. Information sheets were distributed to those who volunteered to be part of the research project. Consent forms were signed and placed in a secure locked filing cabinet in the interest of confidentiality. Where names of people, venues or community groups are used in this thesis, they are pseudonyms to ensure anonymity.

DATA GATHERING

Data were gathered during semi-structured individual and group interviews, during participant observation and from written contributions volunteered by participants. From initial or subsequent interviews, groups with a common focus, and cases for study were identified. This range of data gathering techniques is consistent with the

ethnographic approach in this study (Patton 1990). Table 1 provides an overview of the data gathering and data analysis processes.

TABLE 1 - DATA GATHERING

DATA ANALYSIS

<p>SAMPLE RECRUITMENT 50 men and women aged between 50 and 90 in two overlapping groups A and B</p> <p>A: 27 – 9 males and 18 females tutors/students at Computer Centre.</p> <p>B: 23 – 6 males and 17 females 'outside' entries from groups not involved in the Computer Centre.</p>	
<p>SEMI-STRUCTURED INTERVIEWS Individual semi-structured interviews conducted with each sample participant.</p> <p>Interviews recorded, transcribed and checked for accuracy with participants.</p> <p>REFLECTIVE JOURNALS AND COMPUTER USE DIARIES (groups A and B)</p>	<p>1ST CODING FILTER Sub-division of total sample A and B into two broad length of ICT use groups.</p> <p>Early and late majority adopters (Rogers 1995) identified - opposites isolated.</p> <p>INTERVIEW, JOURNAL AND DIARY Data analysed against themes identified in the literature. New emergent themes resulted in need develop a further filter.</p> <p>2ND CODING FILTER Participants grouped according to common interests for further individual or focus group interviews.</p>
<p>PARTICIPANT OBSERVATION (A) Unobtrusive observation with field notes made at end of each 1on1 or group session at the Computer Centre.</p> <p>SECOND INDIVIDUAL INTERVIEWS, FOCUS GROUPS Semi-structured interviews conducted with sample participants whose first semi-structured interview indicated further investigation. Four focus groups and three cases for study were selected from these second interviews.</p>	<p>3RD ADULT LITERACY FILTER Developed from data gathered from participant observation, second individual and focus group A and B interviews and document perusal.</p> <p>CASES FOR STUDY identified from total (A) and (B) sample.</p> <p>IN-DEPTH ANALYSIS, refinement of earlier themes and cross-checking of rich data analysed from all sources to date and in conjunction with reference to the literature.</p>
<p>COLLABORATIVE STUDY QUESTIONNAIRES</p>	<p>Data analysed by collaborat researchers and findings fed into overall analysis.</p>

Initial interviews revealed not only commonalities but also disparities in ICT use by participants who appeared to have similar educational and socio-economic backgrounds. This result prompted a decision to use a coding filter system to classify sample participants into groups to provide a basis for comparison. The first two of these filters, which are described in detail in the data analysis section in this chapter, were used during initial interviews simply to divide the sample into experienced and novice ICT users and then to place them into peer interest groups for the purpose of arranging focus groups. The third filter was applied to all sample participants with a view to establishing a hierarchy of ICT end-use and to select cases for further in-depth interviews.

The role of the interviewer is to direct the line of questioning albeit minimally to ensure that the focus in the data gathered remains relevant to the research (Burns 2000). It is a truism that older adults have lived a long time and have many and varied experiences. The older adults in this study were keen to share their life stories and reminisce about early experiences, not all related to technology in general or to computers and the Internet in particular. In some cases, the researcher needed to steer the conversation gently but firmly back to the topic under discussion, however both courtesy and a wish to establish a free flow of information softened and slowed the process. Ethics considerations also influenced the research on occasions when the respondent requested the tape recorder be paused for an off-the-record comment or anecdote. If this non-recorded material was thought to be important to the research, alternative questions were devised following consultation between researcher and interviewee prior to re-starting the tape recorder.

SEMI-STRUCTURED INTERVIEWS

Initial interviews of up to an hour's duration were conducted by the researcher in participants' home settings. Interviews were audio-recorded for later transcription and referral back to participants, with an option provided for second interviews if mutually desired. Williamson, Burstein and McKemmish (2002) state that, while open-ended interviews have a standard list of questions, they allow the interviewer to follow up leads from the answers provided by participants. This situation occurred with some of the primary sample being re-interviewed and invited to take part in

focus groups, or case studies, or to provide written reflections on their ICT learning journeys.

FOCUS GROUPS AND CASE STUDIES

The focus group and case study interviews were additional to the individual whole sample semi-structured interviews, compensating to some extent for the absence of regular and continuous participant observation of these 'outside entry' sample members. The four focus groups were based on the Stewart and Shamdasani (1990) model cited by Williamson (2001, p.251), while the three cases for further study (two individuals and one couple) followed the format described by Burns (2000). The contemporary model focus groups were composed of from six to twelve participants who met in comfortable informal surroundings. The four peer interest focus groups were the NGO group, people involved in non-government organisations, the FE group, men and women undertaking further university education in retirement, the AMES group, people from a multicultural background and a tutor group from the Computer Centre. They were made up of a mixture of those who already knew each other and those who were meeting for the first time. The setting was conducive to encouraging opportunity for interaction as the groups discussed a particular topic of interest under the guidance of the facilitator or moderator. The case studies were typical as described by Burns (2000, p.459) involving "the observation of a single unit, e.g. a student, a family group, a class, a school, a community, an event or even an entire culture", in this study, two individuals and one couple. While case studies may be either quantitative or qualitative or a combination of both, the method employed in the study of those participants not fitting neatly into any of the focus groups, is qualitative. The qualitative approach in these cases was chosen as the best way to find extended answers to the 'how', 'when', 'where' and 'why' research questions. Internet use diaries and reflective journals were volunteered by participants from both the focus groups and the case studies.

PARTICIPANT OBSERVATION

Bow (2001) suggests that ethnography is most closely linked with participant observation as the definitions for both are very similar, in that they study people in their everyday social contexts. Participant observation in this study took place on a regular basis over a three-year period as third age men and women joined the

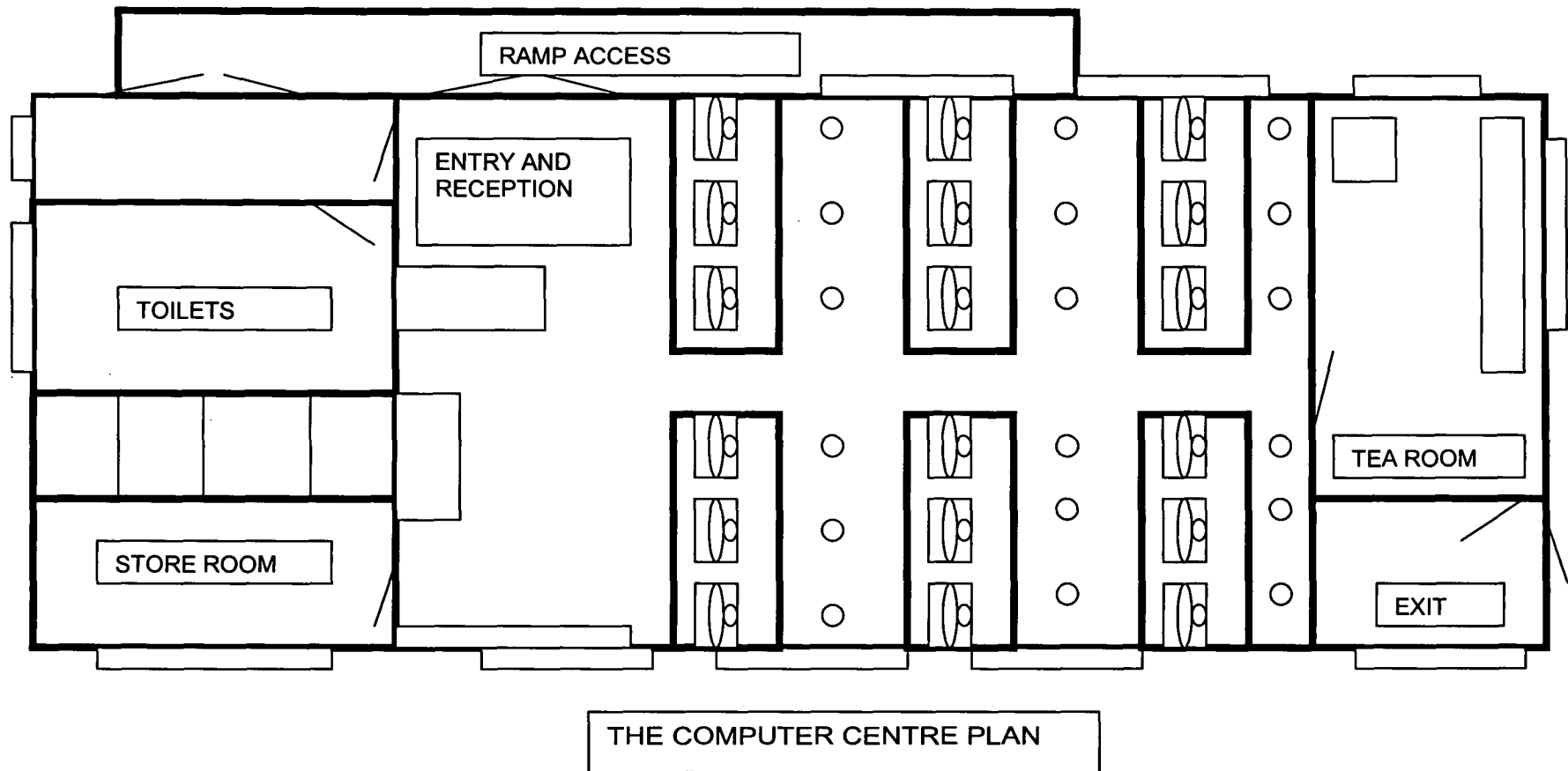
Computer Centre, as tutors, 'graduate' assistant tutors and novice learners. Individual records include entry computer use questionnaires filled in by each member on enrolment at the Computer Centre, whether tutor or student, which form the basis of a cumulative file, which, in the case of the sample participants, has material added during the life of the research study. Checklists of progress, field notes of conversations made by the researcher at the end of each group or one-to-one session, transcripts of interviews, samples of work and computer use diaries and reflective journal entry contributions from approximately one third of sample participants are used for data analysis. Documents from both Computer Centre attendees and those in the wider sample include focus group questionnaires and facilitator notes and minutes of tutor meetings. See Appendix E.

The volume of material gathered for coding and analysis necessarily varies in the same ratio as the amount of time spent at the centre and the level and complexity of the activities undertaken. These records are stored in a locked filing cabinet with no access by anyone except the researcher for coding and analysis and to enable the checking of data with the participants by mutual agreement.

THE COMPUTER CENTRE

The Computer Centre is a large room with ramp access for people with disabilities. Computer-crafted signage attracts attention to the 'Welcome—Please Come In' board, which is placed in slots on the front door when classes are in session. Inside the main room, an unattended reception desk has an attendance book where students sign in and leave their nominal session fees in an honesty box. New members and visitors are greeted by the supervising tutor rostered for duty, who provides information about training and support offered and conducts an initial needs and interest audit. There is also a sessional tutors' day-book, which together with e-mail communication, helps to provide the necessary cohesion required by a loosely bound group who volunteer on different days of the week, the whole group coming together only once a month for meetings of tutors and members or for informal social functions.

A plan of the Computer Centre is on the next page:



The location, stage, setting and actors (Kellehear 1993) in this participant observation study are as follows:

- the location for the observation in this study is in northern regional Tasmania;
- the stage is the Computer Centre;
- the set is the computer room itself, the adjacent tearoom and the spaces between the computer desks; and
- the actors are third age men and women who are linked in some way by a common ICT thread.

Eight purpose built desks, some with room to accommodate wheelchairs, face forward towards the whiteboard and projection screen. Each bench desk is large enough to hold three computers comfortably, with room for document holders and mouse mats. There are fifteen IBM compatible desktop computers and five Apple iMac computers, all of which are regularly upgraded or replaced as fund raising permits. There is spare desk space to accommodate the laptops that members may wish to bring to sessions. All the computers are networked within the room and connected to the Internet. A variety of hardware configurations and application software enables members to work on equipment similar to their own and also to try other systems before they upgrade. A succession of small 'ant byte' grants (Hazzlewood 2002) has augmented member fundraising. These grants have enabled the purchase of peripherals such as colour and black and white printers, scanners, iCams and a data projector. As a result of successful grant applications, ergonomic chairs have replaced the original borrowed plastic chairs and heaters and fans add to the comfort of members as well as complying with occupational health and safety (OHS) requirements. A library of donated superseded texts and computer magazines is displayed in the main room and student-generated posters and notices line the walls. The Internet server and valuable portable equipment is housed in a locked storeroom. The tearoom is small, but never-the-less is a secondary less formal social gathering place for students and tutors as they take casual tea breaks before, during and after sessions. The tearoom is equipped with storage cupboards, a table but no chairs, an urn, a refrigerator and a microwave oven. This latest home comfort, acquired as the result of another small community grant, is a small compensation for the long hours spent at the centre by volunteers, many of whom travel considerable distances from surrounding areas.

Throughout the period of the research, I have been actively involved in the centre as co-founder, management committee member, facilitator and tutor. The management committee, tutors and members of the Computer Centre observation site, some of whom are participants in this research project, are both aware of my personal involvement and supportive of the study.

Apart from the direct individual contact with the participants in the sample, an ‘unobtrusive’ participant observation framework (Kellehear 1993; Runcie 1980; Werner & Schoepfle 1987) was employed. This unobtrusive though purposive observation of more than 300 older adults ICT learners and their interaction with trainers and other learners provided a ‘watermark’ background that brought the main players in the research study in to sharp focus.

As both researcher and facilitator/practitioner in the seniors’ Computer Centre, which is the setting for much of the participant observation and for the focus groups featured in this research study, it is easy for me to identify with Sutcliffe (2004, p.3). She questions what she “takes as a teacher to the research field”, how she functions as both teacher and researcher and how she manages two hats. Sutcliffe finds an answer in Brown (2004) who presents a framework for practitioner/researchers, that acknowledges the competing discourses and justifies the unique, albeit subjective position where the values, work practice and knowledge of the individual cannot be separated from who they are. Lippi (2001), who faced a similar dilemma, that of finding a way to embed himself in the research process, found a solution in the writing of Cunningham (1988, p.166), who describes a method called ‘contextual locating’. This situation occurs where one “feeds into and off the context within which one operates”. In Lippi’s research he observes “people working in the field, writing about it and discussing it at conferences and via e-mail networks. Hence there is an iterative, to-and-fro process that provides the basis for testing and evolving theory. This process has occurred in my indulgent post-retirement research journey as I have written about and discussed my three special interests—education, ageing and technology—at state, national and international conferences and via virtual peer interest e-mail lists whose membership includes other researchers, academics, practitioners, service providers, policy makers and individual third age learners.

OWN ORGANISATION RESEARCH

Coghlan and Brannick (2001) write that the practice of doing research in 'one's own organisation' is very common, however they find little published about it. They define the action research approach that ensues as a cyclic process that comprises diagnosing a problem, planning, taking action and evaluating the action, which leads to further diagnosing, planning, action and evaluation and so on. This action research scenario is seen in the development and management of the Computer Centre. Coghlan and Brannick (2001) warn of the potential dangers inherent in the practice of conducting research on one's own organisation and offer recommendations for avoidance of broaching ethical and political guidelines.

COLLABORATIVE RESEARCH

Collaborative research projects fit comfortably within the constructivist paradigm according to Hatch (2002). Two research projects, involving minor but valuable contribution by members of the sample group studied in this thesis were conducted by peer researchers. This collaboration was initiated through membership of a peer interest e-mail network mentioned in Chapter 4 in the section on actual and virtual networks. These two collaborative studies, which contribute rich data to this thesis, are consistent with a naturalistic qualitative research approach.

The first project involved a group of online learners drawn from the total sample. These sample participants volunteered to fill in questionnaires and attend a focus group. The findings from the Tasmanian focus group, which was one of four Australian ICT learning programs for older adults studied by Taylor, Rose & Wiyono (2004), are summarised in Chapter 4.

The collaboration with a Melbourne-based Australian Multicultural Education Service (AMES) post-graduate researcher Taylor, (Taylor, Rose & Wiyono 2004), to conduct a mutually beneficial collaborative study was welcomed as an opportunity to add an external interpretivist qualitative truth-seeking element to this qualitative research project. This study included a quantitative evaluation of the Computer Centre-based Technical and Further Education (TAFE) eLearn online computer program. The results of the AMES study, which was sponsored by the Australian National Training Authority (ANTA), are recorded in Chapter 4.

The Computer Centre is one of four Australian programs chosen for the AMES research study as part of an Adult Literacy Innovative Projects survey funded by the Australian National Training Authority (ANTA). The programs in the wider 2003-2004 study reported by Taylor, Rose and Wiyono, (2004) and Taylor and Rose, (2004) are all involved in the planning and delivery of ICT learning for older learners. The Computer Centre may be described as one of the many 'great good' third places (Oldenburg 1997; Falk, Golding & Balatti 2000) away from school, home and work, where informal learning takes place. Taylor and Rose (2004, p.8) report that the Computer Centre in providing training for seniors by seniors, "is attracting a group of people who find that many computer courses are too demanding, too long and/or move at too fast a pace"

The second project, initiated by Canadian peer researcher (Fraser 2004) concerned the correlation between health and well-being and computer technology uptake by similar groups of third age ICT learners in Canada and Australia. The Australian contribution to this collaborative study consisted of the completion of a questionnaire developed by Fraser and administered by Fraser and Hazzlewood (2004) during interviews or in focus groups during the current study. The questionnaires were coordinated electronically; the results obtained from the software package administered in Canada to the raw data, were discussed during e-mail exchanges between the third age, post-retirement doctoral student researchers, who are linked by continued membership of a virtual peer-interest network of education, ageing and technology (NEAT) email list. This network, which has national and international member was initiated in the 1999 Year of the Older Person and is administered from the University of New England in Armidale, New South Wales (Foskey 2001). The Canadian-Australian research project involved the total sample participants in the study reported in this thesis, the results of which provided an additional data analysis instrument.

This collaborative research was conducted according to Northern Illinois University requirements for research on human subjects. Consent forms were provided for the participants and an assurance of anonymity was given to respondents to protect confidentiality. Data were presented anonymously and analysed by the Canadian researcher with the Statistical Package for the Social Sciences (SPSS) Version 12.0 following email consultations. There were 93 respondents, 43 Canadian and 50 Australian [Tasmanian], in the Fraser and Hazzlewood study. Frequency counts,

percentages and cumulative percentages were analysed by the Likert scale responses to the survey. The questionnaire and results summary are attached as Appendix B.

DATA ANALYSIS

Fisher (2004) queries what good practice is in the analysis of data. She looks to Golding's (2004) case study of mixed methods and chooses collaboration between researcher and volunteers, participatory practices to produce trustworthy research, and choice of analysis techniques appropriate to each research project. The mixed methods employed include collaboration between the researcher and the various categories identified in the sample group. The collaboration between the researcher in this study and volunteers—the research study participants—occurs at different levels as the researcher fills the roles of interviewer, participant observer, tutor team member, focus group facilitator, fellow student and research colleague. An example of participatory practice is the contact, albeit fleeting—one virtual and one actual—with the researchers in the two collaborative projects with peer researchers. The qualitative constructivist research methodology design chosen in this study is aimed at producing a trustworthy result (Lincoln & Guba 1985) as it employs a measure of triangulation by engaging with different combination groupings of the volunteer sample and with outside collaborative research contacts (Fraser 2004; Taylor, Rose & Wiyono 2004).

The typologies and the emergent themes identified previously and described earlier in this chapter were useful points of reference in initial analysis of interview tapes that were transcribed by the researcher. This personal involvement in the transcription process, although time consuming (Williamson, Burstein & McKemmish 2002) was invaluable in enabling the employment of both audio and visual senses in analysing each recorded conversation. The tapes were stored for re-visiting at a later date after all the interviews had been similarly transcribed.

As each transcript was word processed and then printed out, it was perused and annotated before the next interview was transcribed. Colour coding was used for themes already identified (Hazzlewood 2001) and for new emerging themes, which were also underlined (Appendix E). This allowed the gradual building of evidence of the existence of new themes in the ICT journeys of the total research sample. At the completion of the initial transcription, a matrix was designed with the participant rows numbered 1 to 50 corresponding with the alphabetical sample pseudonym first name

list. The columns headings of the matrix were age range, gender, the five themes mentioned above and a column entitled new theme. Where there appeared to be a lack of data relating to any of the topics, the appropriate cell was highlighted for a later closer examination of the taped interviews. The hard copy transcripts were then re-visited and the typologies previously isolated—window shoppers, e-mailers, searchers and e-seniors—whether stated as such or implied, were then circled. These new annotations were entered into the matrix, adding additional columns as required. Once again, a paucity of data in any row or column, which may have resulted from a number of either researcher or respondent factors, was noted for further analysis. The matrix was examined to rank the themes and typologies in order of number of times each was mentioned by the respondent during the interview. For example, Gender difference x 2 or Training positive or negative x 3. Samples of annotated transcripts are attached as Appendix E. Each taped interview was listened to several times as congruent and disparate information accumulated and the tri-coding filter process was developed.

THE FIRST CODING FILTER

The three 'filters' referred to in the data gathering section above, were applied to each sample participant. The first filter was a dual—computer and Internet—length-of-use question asked at first contact to classify individuals in the sample group as early or more recent technology adopters. A classification was arrived at by ascertaining the length of time individuals of all ages in the sample group had been using any aspect of computers or the Internet, at work or for personal use. The sample participants were initially classified broadly as early majority and late majority adopters of technology in a simplified version of Rogers' (1995) diffusion of innovation theory. This classification was subsequently modified and the groups categorised as early ICT adopters or later ICT adopters as it became apparent that early contact with computer or the Internet does not necessarily translate to early adoption for a number of life circumstance reasons. In this thesis early and later refers to the nature of the adoption rather than the length of contact and awareness time. The perceived need to refine and sub-divide the early and later ICT adoption categories further to reflect the actual extent and nature of computer and Internet end use and interaction resulted in the development of the third coding filter, adult lateracy, which is described under that heading below. The technology involvement of older early adopters, many of whom are further categorised as innovators by Rogers (1995) or gadget freaks by Adler (2002), dates

back from twenty to forty years. The technology involvement of the younger early adopters, whose association with new generations of computer technology dates back from five to twenty years and, who, in a further study, might be categorised as mid-ICT adopters, are included in the broad early ICT adopter category in this study—those who have adopted ICT at the earliest opportunity and add new knowledge and skills as the technology develops. The number of years since first computer experience does not, therefore, necessarily imply inclusion in the early ICT adopter category in this study. Some of the older men, for example, had brief contact with the new technology of their day but because of work-life circumstances, did not continue the association, and as they have taken up ICT as novices since their retirement, they are included in the later rather than the early adopter category. The general criterion for inclusion in the later ICT adopter category is that actual and continuing computer experience is comparatively recent, that is within the last five years.

The application of the first filter resulted in 24 people (9 males and 15 females being placed in the early ICT adopter group and 26 people (6 males and 20 females) in the later ICT adopter group. Seventeen of the early adopters (4 males and 13 females) and 6 of the later adopters (2 males and 4 females) were from the outside entry sample. Lists of the early adopters and later adopters appear in Tables 1 and 2 respectively later in this chapter.

THE SECOND CODING FILTER

During analysis of the interview data, the second coding filter identified peer interest group affiliations, which enabled the formation of focus groups and the identification of cases for further study. The results of the data gathered from the peer interest focus groups and the case studies are reported and discussed in Chapters 4 and 5. The several focus groups are made up of Computer Centre learners and tutors, eLearn online learners, volunteers in non-Government organisations (NGOs) and older adults who have commenced or returned to formal higher education study following retirement.

The application of this second filter resulted in 23 people (6 males and 17 females) from the outside entry sample group being placed in focus groups, 6 in the NGO (non-Government organisation) group, 6 in the FE (further education) group, 8 in the AMES (Australian Multicultural Education Service) group and 2 males and 1 female case study subjects not aligned with any of the groups. The 27 people from the Computer Centre

sample group (9 males and 18 females were divided into a tutor group (6 males and 4 females) and an eLearn online group (3 males and 17 females). 1 female e-Learn member was also a case study subject.

THE THIRD FILTER

The third qualitative filter, 'adult lateracy' (Hazzlewood 2004), was developed to categorise the sample participants according to the extent and complexity of their computer use and Internet interaction and their dependence on further training and ongoing support—their ICT literacy level. The data gathered at initial and subsequent interviews, observation at classes and focus groups at the Computer Centre, from case studies and from journals, were analysed using the adult lateracy filter, which codes participants as either two-dimensional (2D-ICT) or three-dimensional (3D-ICT) end-users, is the central element of the method employed in analysing the data in an effort to elicit answers to the research questions asked.

ADULT LATERACY CODING

Adult lateracy is a term that combines adult literacy and lateral thinking (de Bono, 1967) and is indicative of the need for finding new ways to look at the new learning required almost daily in the new technological age. The two-dimensional and three-dimensional adult lateracy ICT typologies are hereafter referred to by their initials—2D and 3D. The concept is basically that just as there are different literacy and numeracy requirements for different everyday life activities at home, at work, or at play, different ICT literacy levels are needed for superficial or more complex ICT use and interaction. Mastering the narrow two-dimensional basics of using a computer to produce simple documents or greeting cards, to play games for fun while gaining mouse skills, or to send and receive e-mail and access the Internet for simple searching is enough for many older adults as they gain typing and word processing skills. The 2D category is subdivided into two streams—2D-narrow and 2D-wide. If adult lateracy ICT use is visualised as a squat truncated pyramid, it can be seen that there is room for many more later adopter 2D-ICT literacy learners and window shopping late-comers at the base level, than at the more technically specialised flat-topped apex inhabited by innovative early adopter 3D-ICT there are two narrow pathways followed in the 2D-narrow model—horizontal and vertical. As the third age learners move along the narrow 2D-ICT end use general basic horizontal pathways, topics of special interest are discovered

and are seen to be within reach. These special interest topics, such as family history online, digital photography or graphics, are also classified as 2D-narrow, the pathways allowing vertical movement up the sides of the virtual, adult literacy truncated pyramid. As independence is gained both the horizontal and vertical pathways widen and 2D-wide early and later adopters move along them progressively in groups or unaccompanied. The 2D-wide ICT adopters either remain indefinitely and quite contentedly roving to and fro on the 2D-wide pathways and ramps which adequately cater for their current needs and interests. The 2D-wide ICT learners may assist 2D-narrow learners as they gain confidence and competence or they may move outside the square [pyramid] and upwards as they accept challenges found in the 3D-ICT end use area.

- 2D-narrow ICT use is the base level entry to computer technology for later ICT adopter third age learners. Novices learn to send and receive e-mail, conduct simple searches via search engines and www addresses with support from family or friends, or at public and private structured or informal training sessions tailored to their needs and interests.
- 2D-wide ICT end use is the next step for many of the later ICT adopter third age learners as they gain confidence and competence in using both general and specific aspects of 2D-ICT and either remain at the 2D-wide level or look towards the challenge of 3D-ICT use. As each new aspect is discovered and explored, expertise is gained either by self-directed learning or by seeking relevant training and support.
- 3D-ICT end use is the province of e-seniors—third age early or later ICT adopters who range from the innovators identified by Rogers(1995) or the gadget freaks, so called by Adler (2002), to the many curious and capable adults (King 1997) who do not want to be left behind in the new technological age.

TWO AND THREE DIMENSIONAL ICT USERS

The application of the third, adult literacy, filter resulted in 18 people (6 males and 12 females being placed in the 3D-ICT category and 32 people (7 males and 25 females being placed in the 2D-ICT user group. 2D-ICT end use equates with three of the four typologies—window shopper, e-mailer and searcher (Kilpatrick & Hazzlewood 2001) described above in the section on ethnography. 3D-ICT end use equates with the fourth typology—e-senior—from the same study. Both 3D and 2D-wide third age ICT learners are ideal teachers of older adult as they have a wealth of practical; knowledge and an empathy with their peers. As ICT enthusiasts, they have a wealth of practical knowledge, which they willingly share with others.

TABLE 2: EARLY ICT ADOPTERS
AGES

50s			60s			70s			80s		
Early	Mid	Late	Early	Mid	Late	Early	Mid	Late	Early	Mid	Late
	Diana	Sally	Nan	Bertha	Brian	Heinz	Freda	Roy			
		Fiona	Lorna		Murray	Ian	Bridget	Karl			
		Marian	Sheila		Rita	Enid	Henry				
			Nola		Ted						
					Alf						
					Jael						
					Wendy						

The 24 early ICT adopters have been using computers since before 1999, many since computers were first introduced. Early 3D-ICT adopter Computer Centre tutors Brian, Diana, Heinz, Ian, Murray, Nan and Roy have been using computers for between 20 and 30 years, either in their pre-retirement working lives but also as innovative adopters of new technologies (Rogers 1995; Adler 2002) as they evolve. These e-seniors are coded as 3D due to the range and depth of their practical and technical ICT knowledge and skills, which they continually update by self-directed learning, through tutoring new material or through mutual interest groups. The youngest member of the group and of the sample, Diana has formal TAFE qualifications and exhibits the same innovative tendencies as the older tutors, sharing her technical and administrative expertise as team leader and executive member of the Computer Centre parent body. Early 2D-wide ICT adopters e-Learn mentor Marian, NGO members Bertha, Lorna, Rita and Sally, FE focus group members Fiona and Sheila and Ted, AMES focus group members Bridget, Enid, Freda, Henry, Karl, Nola and Wendy, Alf and Jael, and Jenni, the researcher in this study, are classified as early ICT adopters. These e-seniors all used computers during their working lives. They are coded as 2D-wide as they have no wish to add technically complex skills to their ICT repertoire. They are capable users of the technology they need to meet their study or community volunteering commitments, calling on technical help as required.

TABLE 3: LATER ICT ADOPTERS
AGES

50s	50s		60s			70s			80s		
Early	Mid	Late	Early	Mid	Late	Early	Mid	Late	Early	Mid	Late
Maria			Ada	Tina		Kath	Hilda	Roger	Barbara	Jill	Louise
Reg			Laurie			Nora	David		Charlie		
Zoe			Pam			Irene			Patrick		
			Yvette			Madge					
			Queenie			Von					
			Helga			Merle					
						Les					
						Wanda					

26 later ICT adopters have taken up computer technology since 1999

Baby boomer 3D tutors Maria, Reg and Zoe are classified as later ICT adopters as when they were at school, computing was not an integral subject as it is today and they were not exposed to computers in their working lives. They are coded as 3D due to their formal training and ongoing self-directed and continual upgrading of knowledge and skills through volunteering. They have taken up computing within the last five years as has 2D-narrow Helga, who needed limited ICT literacy in her return to formal study.

Assistant tutors 2D-wide ICT adopters Ada, Hilda, Kath and Nora, and Computer Centre treasurer Irene, as well as 2D-narrow Barbara, Charlie and Louise, were participants in the Kilpatrick and Hazzlewood (2001) study and have been using computers for up to four years. The members of this group, who are coded as 2D-narrow, require ongoing support. The assistant tutors who have moved to a 2D-wide independent level continue to learn as they help others.

Computer Centre novice 2D-narrow learners Jill, Laurie, Madge, Roger, Tina, Yvette and Von, and FE focus group members Les and Wanda are later ICT adopters who have been using computers for less than 2 years. The needs, interests and aspirations of the members of this group and time to consolidate learning may determine whether they drop out, as Madge and Von may do, remain at the 2D-narrow level that suits their current needs, or progress as Laurie, Jill and Yvette are toward a 2D-wide classification.

Later 2D-narrow ICT adopters Merle, Queenie and Patrick have used computers for more than two years but are not accessing the Internet in more than a spasmodic and rudimentary way and are classified as non ICT adopters by choice.

Later [lapsed] ICT adopters David and Pam were exposed to computing more than twenty years ago in their workplaces, however, this early experience was brief and superficial and barely remembered, entitling them to be included in the later adopter category.

CONCLUSION

‘Qualitative’ is the umbrella term for a range of research methods. As the qualitative research methods are examined and commonalities noted, any or all of the terms naturalistic, ethnographic, interpretivist or constructivist could stand alone or could be coupled with other qualitative paradigms in describing the research design chosen here. Qualitative methods employ three kinds of data collection—semi-structured or open-ended interviews, direct, often participant, observation and document analysis—according to Patton (1990, p.10). These methods were all employed in this constructivist study. In addition, focus groups, and case studies and collaborative research studies were conducted.

In this chapter the history and development of qualitative research methods and their controversial rise to popularity and arguably, equal status with quantitative methods, were traced as they impact on this thesis research study. The qualitative constructivist research design, which encompasses naturalistic, ethnographic and interpretivist elements, was outlined together with a justification for its employment. Details of the sample composition and recruitment methods were given. The data gathering methods were outlined including that gathered from two small collaborative research projects for analysis by peer researchers. Implications of conducting research in one’s own organisation and a description of the filters used in this study to categorise participants ICT literacy status were included. In the next two results and discussion chapters, the voices of the participants are heard as they articulate the lived experiences of real people in real settings (Denzin & Lincoln 2000).

CHAPTER FOUR: RESULTS AND FINDINGS
THE COMPUTER CENTRE

INTRODUCTION

The chapter is divided into sections that correlate broadly with the research questions, the background in Chapter 1, the literature reviewed in Chapter 2 and the methodology outlined in Chapter 3. The results recorded in this chapter are from an analysis of data gathered from semi-structured interviews and from both direct and ‘unobtrusive’ observation (Kellehear 1993). The participant observation takes place at formal and informal training sessions and at focus groups at the Computer Centre for seniors, which is described in Chapter 3. The sample participants observed in this chapter include learners, tutors and assistants whose details are listed in Table 4. As is the case with the sample participants from other organisations, who are featured in Chapter 5, the lives of the participants are all touched in varying degrees by computer technology interaction. Many of the third age ICT learners, for example, use their computer and Internet skills and knowledge as volunteers in the community groups with which they are affiliated. The groups observed in this chapter are composed of online learners from a series of Technical and Further Education (TAFE) e-Learn courses, learners and tutors at a typical Computer Centre session, a new intake of novice learners, and tutors at a training meeting.

Table 4 on the next page shows details of the 27 sample participants who are members of the Computer Centre. The table shows age group, pre-retirement occupation and ICT use classification following tri-coding of the data. The three coding filters employed, as described in Chapter 3, are length of computer technology experience, focus group or case study category and adult literacy (Hazzlewood 2004) ICT status as at the end of the research period. An asterisk beside a sample member’s name in Table 4 indicates participation in the Hazzlewood and Kilpatrick (2001) study. Data from this earlier study is not used in the current study, however, the Internet journeys are discussed in Research Question finding 1.3 in Chapter 6.

GLOSSARY FOR TABLE 4

AMES	Australian Multicultural Education Service
e-Learn	TAFE certified online ICT learning program
FE	Further Education
NGO	Non-Government Organisation
TAFE	Institute of Technical and Further Education

TABLE 4: COMPUTER CENTRE SAMPLE CHARACTERISTICS

5 MALE, 2 FEMALE 3D-ICT EARLY ADOPTER TUTORS			
Pseudonym		Previous employment	Focus group
Brian	late-60s	Industrial Chemist	Tutor
Diana	mid-50s	Family Business	Tutor
Heinz	early-70s	Security Systems	Tutor
Ian	early-70s	Engineering Draftsman	Tutor
Murray	late-60s	Railway Tradesman	Tutor
Nan	early-60s	Office Manager	Tutor
Roy	late-70s	Insurance Underwriter	Tutor
1 MALE, 2 FEMALE 3D-ICT LATER ADOPTER TUTORS			
Maria	early-50s	Recent Migrant/Housewife	Tutor
Reg	early-50s	Motor Mechanic	Tutor
Zoe	early-50s	Motel Housemaid	Tutor

COMPUTER CENTRE e-LEARN AND AMES FOCUS GROUPS

4 FEMALE 2D-WIDE LATER ICT ADOPTER ASSISTANTS			
Ada*	early-60s	Retail Sales Assistant	e-Learn
Hilda*	mid-70s	Housewife/mother	e-Learn and AMES
Kath*	early-70s	Gift Shop Owner	e-Learn
Nora*	early-70s	Child Care Worker	e-Learn
3 MALE, 10 FEMALE 2D-NARROW LATER ICT ADOPTERNOVICES			
Barbara*	early-80s	Legal Secretary	e-Learn and AMES
Charlie*	early-80s	Technical Teacher	e-Learn
David	mid-70s	Accountant	e-Learn
Irene	early-70s	Retail Sales Assistant	e-Learn and AMES
Jill	mid-80s	Physiotherapist	e-Learn
Laurie	early-60s	Newsagency Lessee	e-Learn and AMES
Louise*	late-80s	Science Teacher	e-Learn/NGOMentor
Madge	early-70s	Primary School Teacher	e-Learn
Pam	early-60s	Special Education Teacher	e-Learn and C/S
Roger	late-70s	Steel Fabricator	e-Learn
Tina	mid-60s	Office Worker	e-Learn
Von	early-70s	Health Shop Assistant	e-Learn
Yvette	early-60s	Hospitality Worker	e-Learn
9 MALES, 18 FEMALES - 27 OF THE TOTAL SAMPLE OF 50			

RESEARCH QUESTION 1

What are the issues relating to adult learning in the third age of active retirement in the technological age?

Keywords, which were used by participants in interviews, in focus group, in case studies and in journal entries, reflect positive, negative and neutral attitudes towards later life ICT learning expressed by participants featured in this chapter. These words are typical of the range of reactions expressed on first introduction to Internet technology:

exciting; interesting; useful; rewarding; amazing; surprising; a great thrill; 'wow'; life-changing; magic; fascinating; challenging; great fun; confusing; frustrating; too hard; disappointing; costly.

ONLINE LEARNERS

The following section puts these words into context as the voices of the participants are used to help answer Research Question 1. The focus is on the 27 members of the sample group who have been involved in one or more volunteer-supported Computer Centre Tasmanian Institute of Technical and Further Education (TAFE) certificated e-Learn online courses. The eLearn online course material includes hard copy and online components encompassing word processing, spread sheets, e-mail and Internet searching, downloading text and graphics from the Internet and uploading assignments to TAFE. The evaluative case study includes excerpts from conversations with e-Learn course participants, tutors and assistants, extrapolations from written end-of-course evaluations and reflective journal comments contributed by course graduates. The e-Learn program itself was also evaluated during the mixed-mode collaborative research project outlined in Chapter 3. The evaluative study was conducted by Australian Multicultural Education Services (AMES) researchers (Taylor, Rose & Wiyono, 2004), who also conducted the AMES focus group, which included older adults from non-English speaking backgrounds and is reported in Chapter 5.

VOLUNTEER SUPPORTED ONLINE LEARNING

The association between TAFE and the Computer Centre originated when several members were encouraged to undertake a formal 2-unit accredited course at TAFE with an offer to use the centre between classes to practice what they learned. One by one these potential ICT learners returned with stories of loss of confidence and self esteem

as they found the classes too large and the pace too fast. Two students reported what appeared to be stress-related symptoms caused by trying to keep up with the younger members in the class. They also fell behind as they were reluctant to attract the attention of the busy tutor when they needed help.

TAFE personnel were then approached and it was arranged for the online course to be conducted in the familiar environment of the Computer Centre. The virtual TAFE teacher was assisted by the volunteer tutors who acted as support to these keen third age ICT learners, who wanted the challenge of a more structured course than was available at informal sessions. This government/NGO collaboration worked very well as each intake of 25 students was divided into smaller groups, students attending on different days to suit family and community commitments. Following an induction for Computer Centre volunteer tutors by the TAFE teacher, one tutor to each two students smoothed the e-Learn path for the students. More than 50% of each of the three intakes to date has graduated at the end of each twelve-week course. A social function attended by the TAFE teacher and students' family and friends marks each graduation certificate presentation. Those who do not complete the assignments due to family problems or a need to progress more slowly are able to enrol in a subsequent course after a period of consolidating and practising skills learned. Those who travel but do not cross the official finishing line in the time allocated for the course can still benefit from the ICT literacy acquisition journey.

Two students, however, whose keenness over-rode doubts voiced by tutors at the pre-course selection sessions, dropped out, despite being offered the pedagogical teacher-dominated instruction they required, and one-to-one support outside the group. These potential ICT adopters lacked the ability to remember basic operations and were unable to transfer information from one situation to another, exhibiting embarrassment akin to panic at their ineptitude in front of peers. They are examples of the importance of finding a balance between the equally counter-productive too much information too soon and too little specialist help too late. These women have opted for longer-term home-supported instruction, but by withdrawing from even the less challenging sessions at the centre, have lost valuable social contact opportunities. The Computer Centre e-Learn course enrolment now requires the completing of an open-ended basic computer familiarisation course. The implication for policy makers, who have

expressed a wish to engage the disengaged who are at risk of becoming socially isolated, is to initiate research and find ways of helping older learners who need specialised help to enable them to overcome problems with learning to use computer technology.

The e-Learn students are introduced to online learning in a friendly comfortable familiar environment as tutors are assisted by helpers who, a short time before, were themselves e-Learners. This arrangement benefits both the new students and the previous course participants who elect to return to help in subsequent e-Learn courses. The learners' problems are well understood by recent e-Learn graduates who also gain by reinforcing their own learning as their confidence and competence increases. In consultation with TAFE, evaluations by both learners and tutors have resulted in the modification of the self-paced course to allow for basic 'plateau' achievement by the group, with optional extension opportunities provided for the front runners, to allow those further behind to catch up. A characteristic noted in those who achieve success in the e-Learn course and the other less formal sessions at the Computer Centre, is perseverance.

This is exemplified by assistant tutor Hilda's approach to the e-Learn course. Hilda is an e-Learn graduate who sees herself driving a hatchback along the super highway and admits to "going at a fair bat exploring interesting looking side tracks". She can mostly get back on the highway by "using the back arrow a lot". Hilda replied without hesitation, when asked if she considered herself to be a super highway tourist or adventurer, "I'd say an adventurer". Hilda said she started off timidly surfing the Internet—too in the water—but now, "anything goes":

When I was doing the e-Learn I was determined to do it. I wasn't going to let it beat me. I came in extra times. There were many days I would get my housework done by 8 o'clock and I would be on the computer all day till twelve o'clock at night just trying to work out some things for myself.

I really did enjoy the learning and I enjoy the challenge when I help others who are just starting. I left at Intermediate at 16—I was a kindergarten teacher at first—now called a playgroup supervisor. I dearly wanted to learn music only one term was not enough.

The Computer Centre aims to narrow a digital divide by providing guided group travel on the Super Highway for older adults learning in retirement, report Taylor, Rose and

Wiyono (2004) who ask what makes the e-Learn training work, what would improve it and what are the barriers to learning ICT in later life. They find that:

- the volunteer tutors, the opportunity for self-paced learning, clear visually orientated print resources, and peer support contribute to the success of the learning;
- the removal or lowering of a number of barriers to online interaction experienced by older adults, which they see to be 'clearly age related', would improve the course; and
- barriers reported by participants include the small text size of much online and hard copy resource material and poorly-designed, cluttered web sites which are not easy to navigate.

I argue that the barriers reported are disincentives for all new ICT learners and not so much age related as an indication of lack of provision by second age course and website developers of user friendly hard copy and online resources (Mitchell 2002; Gough 2002). The general view by the older learners themselves that the pace was too fast is a reflection of the reality of participating in a formal accredited course. The discussion in the e-Learn focus group reinforces this view but also points out the satisfaction gained by those who accept the challenge and complete the course. The replies to the questions about training improvement, which hold implications for course and website developers, reiterated the problem of print size, particularly on web pages where the size cannot be increased, the need for one-to-one peer support and for extra time to practice new skills learned.

Another view of the online course is from Barbara who completed the online course and also regularly attended the Computer Centre to brush up her word processing skills before a not very successful second hip replacement. She is able to keep in contact with friends and relatives from home by e-mail and has been introduced to the U3A learning online network. This is helping to counteract the social isolation that often follows a detrimental change to mobility circumstances. Barbara adds that she learned much more than she expected to:

I am much more confident about using the computer now and realise, having seen experts at work that difficulties are not always of my own making! I am grateful for the opportunity to make new friends and to learn a new skill at my age, as it gives me confidence that I am still capable of learning new things.

It was interesting to have e-mail contact with the TAFE tutor and the exchange among class members was good.

Marian acts as mentor to the e-Learn volunteer tutors in her capacity as online facilitator. She is a 2D-wide ICT early adopter who has acquired considerable ICT knowledge and skills via formal learning and on the job in-service training. Marian is moving towards early retirement and has plans for both recreational pursuits and increased community volunteer involvement.

Initially there was one three-hour e-Learn class a week, which Barbara and several other students found gave them more information than they could handle at one session. When Marian suggested a change to two two-hourly classes on different days, this was considered to be much better by most of the members in the course. Barbara's comment was that this meant additional cost in getting to and from the centre, which could make a difference to people on pensions. Some of the comments from e-Learners expressed concerns that the course is too ambitious for complete beginners:

Barbara: I am an experienced touch typist, but for people who were not familiar with the keyboard, it would have been quite daunting.

Madge: No mention was made of the amount of time we needed to spend at home on the Internet to keep up with the demands of the course.

Jill: Spending so much time to complete a course within a specified time frame becomes counter-productive . . .

Von: There is not enough time allowed to reinforce one piece of knowledge before going on to the next . . .

Madge: I think it would be very difficult to do e-Learn entirely online—of course if you were an isolated student, you would have to do it.

Roger: There are so many minor things that can hold you up—perhaps it is the generation thing.

Barbara: I hope this does not sound too negative. I realise we are guinea pigs and no doubt future students will benefit from the experiences of online staff, on-site volunteers and students . . .

These remarks all have implications for the Computer Centre management and tutor team as well as those who develop the courses and for those who deliver the training and provide the support for third age ICT learners. The e-Learn course content has

evolved over the life of this research study as changes have been made. TAFE course developers have responded to the summative evaluations of the older students and volunteer tutors, which are part of the cyclic action research in the Computer Centre ICT program.

Comments from Tina throw light on the value of the journey of a later, initially reluctant ICT adopter who is hoping to complete the next e-Learn course after she has had time to practice what she learned at her first attempt. Although connected to the Internet at home, she returns to the Computer Centre as much for the social contact as for help with e-mail attachments and fits in special interest family history sessions around her social tennis roster:

I was busy with other activities, until my daughter and son-in-law gave me a computer from the office. Mind you, I think if you're not careful, Internet surfing could be a time waster.

I do find websites difficult to navigate because of instructions being all over the screen and making accessing information confusing and frustrating.

Tina also indicated that she was really interested in joining a U3A family history online but added that she could use some 'person support', at least at the beginning. The persistence of this learner, who moved from indifference to potential 2D-wide end use, was a factor in the development of a volunteer ICT outreach phone and home visit program based at the Computer Centre. Tina's perception of her own needs was also confirmation of a general requirement for a composite virtual/actual support program, which is in the development stage. This is a program where older adults, whose mobility or confidence is limited and who enrol in U3A online courses or online learning circles, receive assistance as they share experiences in actual and virtual support networks. The bulk of the courses will be completed at home with regular student-paced mutual interest trouble shooting meetings providing important social contact. Other constructive criticisms from e-Learn online learners add to the list of perceived needs of both learners and trainers:

Madge: You don't have time to play with e-mail or the Internet. It would be better to have used the Internet before starting the course itself . . .

Roger: Knowing your way around the Internet is very useful if you're intending to travel overseas. I also found the exercise tied up with buying a hypothetical camera on the Net was quite intriguing . .

Irene: Simplified notes produced by the tutors are most useful. It's better than having to wade through the manual. . .

Hilda: When I first looked at the course—I had a little bit of background on computers, and I thought this would be alright. But when I looked more closely, I thought 'Holy Mackerel' . . .

Charlie: I have learned a lot from the e-Learn course and realise that there is much more to learn . . .

Jill: My next steep learning curve will be with digital photography and a family history story for the grandchildren . . .

The members of the focus group agreed that a basic level of computer literacy should be a mandatory requirement for enrolment in e-Learn, which was promoted as a 'no experience necessary' course. Some of the comments from evaluation sheets follow:

Louise: I felt I could demonstrate clearly what I had learned and was given the opportunity to do so.

Yvette: Being able to access grades, glossary and resources by the icons was not only helpful but most engaging.

Irene: e-Learn is a comprehensive basis for further learning . . .

Roger: The course allows senior students to achieve and become active members of society in the area of technology . . .

Irene: After completing all the exercises I was able to refer back to them with ease and reinforce my learning . . .

Pam, whose story is told in the next chapter, comments on her experience with the e-Learn course:

e-Learn provided excellent training for me as the level of proficiency of the TAFE online teacher and the volunteer tutors was very high. When one tutor or assistant was busy, another was willing to help. I found the whole environment was supportive for this similar age group.

LEARNERS AND TUTORS

The comments that follow are typical of those heard at any informal general interest day at the Computer Centre where students receive small-group support for whatever PC or Apple Mac aspect of computing or Internet searching or surfing interests them.

Snatches of quiet conversation are heard as volunteer tutors move about the room when hands go up, or as they notice someone sitting staring at the screen, fascinated, bemused or confused:

I just looked up and found everything was in capitals, so I've deleted it all and started again . . .

Mine's all gone too but I didn't mean it to . . .

I can't believe there are so many items on the screen about holidaying with dogs—and in such a short time . . .

I was dropped into doing this newsletter and I need to know how to put it into columns . . .

I can't open the attachment on my e-mail . . .

My problem is that the picture I want to send is too big . . .

I've found this really cheap airfare to Western Australia on QANTAS. How do I book it before the offer expires? . . .

I can't remember what I called the letter I started last week, or where I put it for that matter. . .

I'm going to put a clipart picture in my journal if it's the last thing I do . . .

I just found the most interesting article on arthritis . . .

EARLY AND LATER ICT ADOPTERS

The older early ICT adopter Computer Centre tutors Brian, Heinz, Ian, Murray, Nan and Roy have a wide and disparate range of early computing equipment experience. Reminiscing about this technology is found to be mostly a male tendency as reported by Barnett and Adkins (2004). Entering the Super Highway from many entry points and travelling at different speeds to different ICT destinations, these lifelong learners have added to a range of knowledge and skills incrementally, mainly through informal and self-directed learning. The younger early adopter ICT tutors, Diana, Marie, Reg and Zoe, who did not experience the very early years of computing, exhibit early adopter

characteristics as they embrace Internet technology as it develops. They have had the benefit of formal technology training or workplace computer experience. The older and younger tutors pool their basic and special interest knowledge and expertise to share with their much later ICT adopter assistant tutors and to provide efficient and effective training for their peer or older, even later ICT adopter students.

Many of the new learners have definite ideas of what their ICT goals are, and many employ strategies to assist them to achieve their goals. This is evident in exchanges between Charlie, Barbara, Laurie and David.

- Charlie is an ex-teacher of technical subjects who is in his early-80s. He is explaining to his co-learners that he has got over his initial fear of the computer and is learning to type.
- Barbara, also in her early-80s, was a legal secretary before her retirement and has recently undergone hip surgery, which limits her physical activities. She is learning to format text to help her with her family history story writing.
- Laurie, Barbara's neighbour ran her own newsagency before a serious illness caused her to sell it. She is in her early-60s and drives Barbara to and from classes. Laurie's aim in seeking to become ICT literate was to gain confidence and skills to help her to return to formal study or find part time employment, which she has already done.
- David is a retired accountant in his mid-70s who has a hearing impairment. He misses most of the conversation around him except when people are close, or face him directly.

Charlie is typical of many in his age group, who missed out on being early technology adopters as their career paths veered away from brief contact with computers:

When I was teaching and had an opportunity to get into computers, I had to postpone it to study education subjects, so here I am, years later, just beginning again in my eighties.

A tutor was sitting next to David showing him how to reply to an e-mail he had just opened. David was engrossed in the task as he carefully tapped out a message.

Charlie: I've got over my initial fear but I think that manual dexterity is a very important skill to master. I don't have any trouble with positioning the mouse, but people with shaky hands could have a problem.

Barbara: I had two years at a Commercial College in the UK, so typing's not a problem except that I grew up with typewriters so I have to be careful not to strike the keys too hard or I end up with lots of the same letters.

Charlie: I'm not a typist so I made a little map of the typing keyboard, which I printed out and stuck to the kitchen table and tried to commit the notes, as it were, to memory.

Laurie: I have no problems with the mouse either as I played Solitaire when I started—to gain mouse skills of course.

Charlie: I usually finish up with a game of Solitaire after I've written up my journal for the day. I find that relaxing.

Barbara: I have actually started to write about my life up to my early twenties, as it was 12,000 miles away and so different from life here today.

Charlie: I found a map on the Internet of the place in Yorkshire where I grew up before the War. It brings back memories

David: I was staggered to see how clear the pictures were that my son e-mailed me from New York. There are some of the grandchildren too. I was able to print them out and e-mail him back straight away.

The prints were passed around and admired as Charlie exclaimed that it was amazing how pictures from the other side of the world could come onto your computer in a few seconds. Laurie returned to her typing tutorial and Barbara raised her hand for help with a new word processing exercise. Charlie and David wandered off into the tearoom where they joined tutors Brian, Jenni and Nan.

- Brian is a recently recruited 3D early ICT adopter in his late-60s, who falls into Roger's (1995) innovator category, as he enthusiastically follows up each new technology development. He is a retired industrial chemist who delights in training advanced learners, who want to know more about the technical side of computing, rather than absolute beginners. Brian has joined Nan, who runs the one day a week 'second step' sessions.
- Nan is a versatile 3D early ICT adopter who has just turned 60 and hopes her volunteer service will help her to obtain part-time employment as her husband is on a disability pension. Nan writes the material for her courses and is treasurer of the Computer Centre committee.
- Jenni, the researcher in this study, is a 2D-wide early ICT adopter in her early-70s, who is a volunteer co-ordinator and e-Learn tutor at the Computer Centre and regularly visits classes held on days other than her rostered weekly sessions. She is also an observer/member of the Chapter 5 non-government organisation (NGO) and further education (FE) focus groups.

Charlie and David are soon drawn into the conversation circle as Jenni asks Brian when he first used computers. Brian explains that he has been in electronics for between 30 and 40 years, “when transistors were about the size of toothpaste tubes”:

In 1975 micro computers came out. You didn’t have a keyboard or a VDU. You had globes that lit up—I call it ‘binary by fingers’. What you could do on that equipment was extraordinary for the time.

Charlie: How did you manage without a keyboard?

Brian: ASSCI could accommodate just about everything. The sophisticated thing was to have a keyboard so you converted these. Basically, it was machine-controlled.

Charlie had lost concentration and was edging towards the door when he heard Brian say he had eventually got into amateur radio. This was something Charlie was interested in and he asked Brian how far away he could communicate. Brian replied that the signals were more like those from a lighthouse and reached the two hundred and fifty miles across Bass Strait to the Australian mainland. Charlie rejoined that he had built a whopping big phased array antenna nearly fifty years ago and received the first TV pictures transmitted from Melbourne. After some more technical exchanges, Charlie moved back to his class as Jenni was asking Brian if the uptake of technology had been a gradual or a sudden interest for him.

Brian: Well, it sort of developed, associated with what was probably the first Computer Show on the coast. There was a thing called Cell 1 with a megabyte of RAM. You could play ‘flip the coin’. It was a modified TV set. Then the little 8 bit machines arrived—the microbees and later the BBCs . . .

Nan had been sipping her tea and waiting to get a word in, but Brian was in an expansive reminiscing mode and continued:

. . . before that, I’d built one—then it got more complex as with the Commodore etcetera, and then IBM gave us our first real PC. Knowing all about them from having fingers and wrists in them, I then had to start teaching people.

David had been following the close-quarters conversation with interest and broke in quietly as he explained that more than twenty years ago he persuaded his boss to install a desk-top computer to store debtors’ records. He spoke slowly as he recalled the days before this advance when information from the main frame computer was transferred to

punch cards, which were then sent to Sydney for processing and return several days later . . . his words tapered off as the memories were recalled . . .

Nan took advantage of this lull in the conversation to contribute the information that she first started using computers in 1966 when she was working with Remington Rand:

Part of my work was to set up the decimal currency changeover. I then went to Melbourne and got a job using an IBM computerised computer—the control panel was about three feet square with wires running everywhere.

Brian: Twenty five years ago, when my boss said one computer would be more than enough to see us through, there were thirty on the staff. It took a lot of persuasion to even buy that one and no chance of any in-service training. There was a tremendous resistance from management to the technology which was so much faster than the way it had been done.

David rejoined that he had been in a similar situation, but had changed jobs and did not return to computing until recently when his children had bought him a computer as he was now on his own. Still chatting, the group returned to the computer room as an assistant tutor and several of the other students moved into the tearoom.

They were swapping notes about their e-mail experiences: E-mail is the Internet interaction which is used first and most often by the older adults in this study. The finding that e-mail is the Internet facility which is the entrée to ICT by most older adults as they or their family and friends move away or travel, is consistent with much of the literature reviewed (DCITA 2000; NTIA 2000; Scott 1999; Swindell 2002). The preference for electronic communication, especially by women, has not changed from the earlier seniors online study (Kilpatrick and Hazzlewood 2001), which included 12 of the 50 participants in this study. A certain degree of ambivalence was noted however, in a minority of the comments about the pros and cons of e-mail communication as quoted below and reported in this chapter and in Chapter 5. This attitude appears to be linked with whether family and peers have e-mail addresses and with stories about the amount of time-wasting unwanted junk mail received and also a fear of catching viruses from Internet access, even with virus protection installed:

I've a few friends who have computers, but unfortunately most of my age group do not . . .

Actually I'd rather use the phone to talk to my daughter and granddaughter, but I must admit it's quick—and cheap . . .

E-mail to me is a little bit like Topsy. It just grows and grows and the more you use it the more mail you get . . .

My daughter was only away for two weeks but when she returned there was a heap of SPAM junk mail . . .

When people get a letter they open it straight away. The trouble with e-mail is that some of my friends tell me they only check their e-mail once a week . . .

My family has four computers for study and work but they prefer to talk to us on the speaker phone . . .

There is also a nostalgia voiced for the feel and perfume as well as the personal keepsake nature of the old carefully handwritten letters. The majority of responses about e-mail communication, however, are positive as people quickly overcome their initial apprehension about lack of typing skills and reported anxiety about either being too slow in composing messages online, or having to send e-mails too hurriedly without time to reflect and choose words carefully.

People who lack mobility can put themselves back into contact with the world . . .

E-mail can link you up with all sorts of interesting people and happenings . . .

It's definitely broadening your scope of knowledge, because you get information from other countries. You don't realise what's going on in those counties till you start getting e-mails from them . . .

It's cheaper and quicker than snail mail and saves idle chatting time. When you actually talk to people, you feel you have to ask then how they are. With e-mail you don't have to go into details about everyone's health . . .

I think e-mail is just magic . . .

The majority of older adults in this study quickly learned to use e-mail competently to communicate regularly with family, friends and colleagues who are online. Some use this convenient facility in preference to making more expensive telephone calls, except for special occasions or when out of Internet contact, but a combination of both methods of communication is found to be the norm for this third age cohort.

COGNITIVE AGEING ISSUES

Cognitive ageing memory lapses and the techniques to compensate for these decrements feature in the data gathered. The older adults surveyed are quite open in their admitting to not being able to remember many of the steps required in learning to use computers and to access the Internet. There is much good-humoured chat about ‘senior moments’ and stories about lost or misplaced car keys and glasses. Disks are left in disk drives, despite humourous reminder notices on top of monitors. Coats are left behind in the classroom, forgotten till next needed; meetings are missed and passwords are often unable to be recalled unless written down.

Nora and Hilda are classified as 2D-wide later ICT adopters. They are assistant tutors who have been part of the growth of the Computer Centre from its inception.

- Nora is a 70 year old who was tutoring beginners at U3A classes when her friend Hilda recruited her to help at the Computer Centre. She took up computing to encourage her stay-at-home husband to find a retirement interest, but when this ploy did not work, she made a stand to spend some time each week away from the house. Nora continues to tutor at both groups and is a conduit for a mutually beneficial two way movement between members of both groups. She acknowledges the benefit she gained from her experience in an e-Learn course. Nora supervises a computerised machine- sewing group at the Computer Centre and is a keen assistant tutor in both the family history and graphics sessions.
- Hilda, who is in her mid-70s, was a founding member of the Computer Centre and as well as assisting with setting up the family history sessions and producing the centre newsletter. Hilda is also involved with a diversional therapy group program in which volunteers visit nursing homes to help residents to use the communal computers to keep in touch with distant family members. Hilda has adopted a mother-hen role in the Computer Centre, keeping the tea room spotless and the cookie jar full.

Hilda came to the centre to hone her self-taught family history skills prior to organising a large family reunion. Her epiphany came when her son replaced her typewriter and ‘snail-mail’ tools with a computer and she completed an e-Learn course in record time by sheer determination. Hilda remains on call as a family history online emergency tutor, but she prefers the autonomy and low-key profile in helping nursing home residents with their computing and the one-to-one ICT support of homebound older adults.

Von and Irene who are the same age—in their early-70s—and have similar educational and employment backgrounds and family responsibilities enrolled together in an e-Learn course. They both have older husbands who need special help, and grandchildren who visit for sleepovers. Despite the similarity of their external circumstances, their approaches to learning computing and the results of their efforts are markedly different. The following quotes are very similar on the surface, but there are subtle undertones, which have implications for management and tutors:

Von: The main trouble is that I forget so much—I write notes and then a week or two later when I go to read them, I can't make out what they're all about.

Irene: I make notes in a special document on the computer and print them out in class and go over them with my tutor each week to make sure they make sense. It's good word processing practice too.

Von: I never could spell so when I look up the spell check, I never know which word they show you is the right one.

Irene: I'm not much of a speller either but I'm more conscious of words now and how they're spelt. Computing would have to help spelling. I'm more literate with words and I'm reading more.

Von: I find that with all the jargon of computing and the Internet, I have to read it and read it and try to commit it to memory. Then I don't always understand it.

Irene: There's so much to remember. I don't try to learn too much at once. My memory has never been too good, but I think it's improved a bit lately.

Von: So what if your memory is a bit eccentric? Enjoy life. Eat plenty of wheat germ. Check out what the right food and vitamins can do. Look for new things for your brain to play with and keep on learning on the Internet.

This last remark was an effort at bravado as Von left before the class was halfway through, declaring that she had a headache. She did not return to complete the course and her son is paying for private tuition at home and is putting pressure on her to learn to use the computer he passed on to her. Von's health food tips are missed as much as she is missing the social contact and members hope she will return to the centre to less stressful sessions more aligned with her family history interests. She is still having

problems with her ability to retain and recall information, but is progressing slowly. Irene has enrolled in more formal training at TAFE and is using her spreadsheet skills as treasurer of the Computer Centre and of her ladies' golf club.

There are many different ways older adult learners cope with the problems of memory dimming or desertion. These coping mechanisms vary with individuals and with their learning styles and preferences. Observing how learners compensate for these age related decrements (Sargeant & Unkenstein, 2001) reinforces the answers made by participants to the interview questions relating to memory and learning styles. The following quotes are from interview transcripts:

I use a highlighter to make the steps easier to follow . . .

I pencil in where I'm up to each session with the date beside it so I can start from there when I put my floppy disk in the computer at home . . .

I make a little list before I come to class otherwise I can't remember what I want to ask . . .

I like to have step-by-step checklists so I don't miss anything out . .

I seem to take much longer to type a letter on the computer than I used to on my typewriter . . .

My tutor has helped me make a set of cards for starting and shutting down the computer and opening and closing different programs, and for saving work . . .

I'm very fortunate that I can phone a Computer Centre e-buddy when I need help . . .

My wife [husband, grandson, daughter,. friend, neighbour] helps me when I need it . . .

SUMMARY

Transformation at the micro level, through interaction with ICT in the company of peers in an actual or virtual learning, sharing situation is found to range from dramatic and acknowledged by the learner to subtle and only slowly realised, if recognised by the learner at all. The benefits of this social interaction to the learners themselves and to their immediate family and friends and through volunteer effort to strangers, is discussed in the section on social capital community contribution. The social aspect can be observed in the Computer Centre as older adults, whether tutors, assistants,

beginning or advanced learners, gather for a wide range of computer and Internet-based purposes. These third age learners are matching their needs and wants with opportunities for training and support as they learn new skills in both old and tried, and new and innovative ways.

The issues relating to ICT learning reported by this sample of Computer Centre third age learners are highlighted in the words of the participants. There are implications for both learners and trainers and for older adults in general as they encounter and overcome age-related physical and cognitive impairments. These older adults are eager to learn new skills and are more comfortable in small same-age groups, learning at their own pace and receiving actual or virtual support from peers. Window shopping occurs in all areas of computer and Internet technology as learners become aware of the potential benefits by watching others in the class. Email communication is reported to be the first and most used ICT facility, closely followed by Internet browsing and searching.

More participants reported having a positive, rather than a neutral or negative attitude towards computer technology, in part fostered by actual and virtual peer age support during and following training. Social interaction is confirmed as an important aspect of learning in informal community learning groups, second only to the tailoring of training provision and presentation to learners' needs and interests, and the implications of cognitive slowing. These issues all relate to how older adults learn to interact with new technology.

RESEARCH QUESTION 2

How do older men and women learn to use computers and access the Internet?

Key words for this section are taken from interview transcripts:

by doing; by listening; trial and error; from books; in clubs; slowly but surely; it's not easy; I get excited; step by step; by watching others and doing; by writing notes; by spending time to practice; enrolling in a course; joining a computer club; with help from family, help from neighbours; by experimenting; by hazarding a guess; by having a go.

These words indicate the variety of ways in which the third age learners in this study tackle new learning experiences. The learners whose experiences help to answer Research Question 2 about how older adults learn to access new technology. The

participants report on their learning styles and preferences, their motivation to learn new skills and whether age or gender affect this learning.

LEARNING STYLES

Almost all the older adults surveyed, when asked to describe their learning styles, answered without hesitation, 'visual', although this answer was modified on reflection as is shown above by comments about auditory, kinaesthetic or mixed modes. This nomination of visual as the preferred learning style cuts across all education and life experience strata, although very few of the later adopters could elaborate:

My learning style is probably visual . . .

I need to write things down . . .

Visual—visual . . .

My learning style is repetition and visual . . .

I do a lot of reading . . .

Visual mainly. I worked on the machines, the ledger machines for 12 or 13 years . . .

I find the look, listen and do plan suits me best . . .

My learning style would be a combination of the lot—seeing, listening and doing . . .

The implications from the findings in this study about learning styles and preferences of the Computer Centre members and also the participants in the focus groups and case studies are central to the development and delivery of effective ICT training and support programs for older—and younger—adult ICT novice learners. An awareness of the way people prefer to learn is important for the learners themselves, the trainers and the course and website developers to ensure learners' optimum potential is realised.

MOTIVATION

The encouragement from family, particularly children, who supply the hand-me-up computers (Scott 1999), is the most often reported trigger for the older adult to seek training and support:

My son went to Western Australia as a jackeroo and now owns a computer business. I wanted a typewriter/word processor, but he said "No Mum, you've got to have a computer". . . ,

My son set me up with a computer before he went to work in Brazil. Would you believe, there are Internet cafes in the jungle, so we can keep in touch. . . .

My son and his wife live in Hobart and as I have a bad back and cannot get down to see them very often, they have set me up with a computer and an Internet service provider . . .

My granddaughter gave me her desktop computer when she got her new laptop and she gives me a practice lesson once a week between classes at the centre. . .

Potential adopters of ICT are held back by lack of time or need to join the throngs on the Super Highway, content to glance sideways occasionally from the safe and non-threatening byways. Yvette provides an example of serendipitous motivating factors that triggered a move to actively seek to learn about computing. Curious but lacking confidence, a chance encounter provided the motivation for one woman to place a tentative if reluctant toe on the Super Highway tarmac. Yvette tells her own story as she reflects on her cyber-journey, from reluctant to potential ICT adopter, describing it as a gradually increasing, almost subliminal awareness of opportunities thought to be beyond her reach:

‘Never do I want to know about computers’ was my thinking for many years. There seemed to be so many other things to do that would be far more rewarding and creative. During those long years of determined ignorance, everyday life seemed to quietly and efficiently erode this stand-off.

The television offered enticing information—if one would only www etcetera. One would encounter this stumbling block everywhere—newspapers, banking, holiday advertisements and air flights at super rates. Just www and you can go to Neverland at the press of a button. ‘Well’, I thought, ‘that’s alright, I’ll just keep life at a simple pace and forget all this fast lane stuff. It’s going to be too difficult to learn anyway’.

One day at our local market I came across a stall, where two friendly ladies invited people to come and learn about computers at their own pace at a very reasonable price, and all you had to be was retired and over fifty. I called upon these people who operated a computer program for seniors run by volunteers who were also seniors. It was just for a look, mind you, to see just exactly what went on within.

Before I could escape I was placed in a seat and shown a brightly coloured screen and a funny little thing called a mouse and the biggest keyboard I had ever seen. I was shown how to make things appear on

the screen and lo and behold, if you concentrated enough you could actually have some control of your intentions. In a small way, I am now helping by assisting beginners who are trying the big 'C' and learning about computing.

A transformation from disinterest to enthusiasm for new technology bears out Williamson, Bow and Wale's (1997) contention that attitudinal change from negative or neutral to positive is not uncommon among third age learners who are exposed to initial and continuing appropriate training and support. Yvette is an example of unrealised potential as she passed quickly through the stages of window shopper, e-mailer and Internet searcher (Kilpatrick & Hazzlewood 2001) to her present status as a 2D-wide volunteer ICT tutor and part-time TAFE Information Technology Certificate course student.

This example has implications for government policy makers concerned about the disengaged non adopters of ICT in the community (Deeth 2002). The task of reaching the numbers of older adults who are at risk of marginalisation through a lack of ICT literacy is not one that should be left to a few compartmentalised volunteer ICT training cells financed by small grants and member fundraising.

LEARNING MATCHING NEEDS OF OLDER ADULTS

The third age learners in the current sample accessing new technology range along a continuum stretching from the occasional e-mail to family or friends and tentative 'toe in the water' Internet surfing, to regular, purposeful, online searching for health, hobbies or travel information, communicating with friends and colleagues around the world. Each new intake of novice learners at the Computer Centre is found to have a very similar fairly limited range of needs, interests and expectations. Association with others who are more experienced soon sees the identification of new needs, the fun of finding new interests and the raising of goals. An example of this extension and expansion from 2D-narrow to 2D-wide is seen in Ada's case.

- Ada has a disability that prevents her from sitting or standing for any length of time. She is unable to drive a car, refuses lifts and walks everywhere. Ada is a typical sandwich generation (Abaya 1992) example as she actively supports her mother who is in retirement nursing home care and minds her grand children when their mother has occasional part time weekend

employment. Ada volunteers at the Computer Centre twice a week and also volunteers regularly teaching crafts at her mother's retirement village:

I came to the Computer Centre to find out more about photography but I hadn't been long at the centre before I took up the offer of a free e-Learn course. Now I supervise the monthly Saturday morning digital photography club. I have a key and open up for the facilitator and look after security and I love it.

I learn so much while I'm supervising the centre and my confidence has increased with the responsibility that I'm now enrolled in a couple of TAFE business units. My health has improved dramatically lately and I'm doing work experience as a diversional therapist at a retirement village supervising computer activities.

Ada quickly became a valuable member of the Computer Centre and became a 'journeyman' assistant to the graphic art tutor. Following her apprenticeship in her new passion, graphics and digital photography enhancement and her graduation from the first TAFE e-Learn course held at the Computer Centre, Ada has joined the tutor team. She assists with graphics and reinforces her learning as she helps new e-Learners. Ada has instant rapport with the older adult learners as she had been where they are now, a few short months ago and she is also a volunteer craft worker at a retirement village. The acceptance of the portfolio Computer Centre management committee role as publicity officer by someone who is by her own admission "not good with words" has seen a further increase in self esteem as it combines both ICT and social interaction.

FOCUS ON NOVICE LEARNERS AT THE COMPUTER CENTRE

The new intake of potential cyber seniors came into the Computer Centre separately or with a partner or friend. They signed the attendance register as they paid their fees and exchanged greetings with the tutor at the desk and were shepherded down the aisle to sit at a desk in front of an IBM compatible PC or an Apple MacIntosh personal computer. Zoe, the facilitator for the day, and tutors Hilda and Nora gave out entry questionnaires while Ada busied herself seeing that the urn was on and the tea, coffee and biscuits were ready for the break.

- Zoe is a 2D-wide baby boomer who has been using a computer for four years, after completing an adult education course following an injury that forced her to leave her job. Her special interests include converting vinyl records to CDs and home movies to DVDs as well as scrap-booking, which hobby she shares

with members of the Computer Centre. She also tutors in a wide range of software applications.

I thoroughly enjoy helping people because I was once 'in their shoes'.
I say you're never too old to learn.

- Heinz and Ian, the Mac tutors, both in their early-70s, set up the data projector ready for the in-house 'infotainment'. Heinz and Ian, known affectionately among the PC tutors, as the Mac attack twins, are 3D early adopters of all aspects of ICT. They cater for the small but dedicated proportion of Mac users who attend the Computer Centre. Heinz and Ian are both self-taught enthusiastic champions of the qualities of Mac computers as they quietly and good humouredly take every opportunity to demonstrate these to both Mac and PC-user membership. They are responsible for purchase and maintenance of the Computer Centre Mac equipment and sit on the sponsor-body management committee.

Heinz came to computing to help his youngest son through High School where Apple MacIntosh computers were the computers used. He was a founding member of a Mac User Group that joined forces with a PC User group when the Computer Centre was set up. Heinz is the Computer Centre and sponsor group webmaster.

Ian was drawn to the Computer aided Drawing (CAD) capacities of the Apple Macs in his working life and since retirement has specialised in computerised drawing as an art form. He was also a founding member of the Mac User Group and oversees the Computer Centre network links.

There was a bit of shuffling and fossicking in bags for glasses and notebooks as the new students glanced about to see if there was anyone they knew. The tutors moved about the room helping the students to fill in the questionnaires designed to find out needs and interests, times and days available and details about home computers if any and whether these are connected to the Internet.

Zoe then suggested that before the presentation outlining what the Computer Centre had to offer members, a session getting to know what people hoped to gain from attending the centre would be useful. She asked who would start the ball rolling. A short silence was broken by assistant tutor Hilda:

I must admit I'd never looked up anything on the Internet except family history till I looked up digital cameras the other morning. I got so interested once I started, I forgot all about the housework and was

still exploring when my husband came home from bowls looking for his lunch.

Amid some laughter at this admission, Nora said that she had looked up embroidery sites but would still like to know more about how to download and transfer the patterns to her sewing machine disk. The ice broken, several newcomers then ventured remarks:

This is the first time I've been here and I'm a bit nervous. We've just bought a new computer. I have no idea what to do so thought this was the best place to start . . .

I can play patience. That's very good but I'd like to use the Internet. Not only to send e-mails but to find out things and learn what's going on in the world . . .

I only just discovered that you can download china painting patterns and designs. I need to know how I can do this and also I'd like to find out how to join a china painting chat group

I've just bought a laptop and I came in last week to see if I could learn how to send and receive e-mails. Most of my family live in Victoria and have computers and e-mail addresses . . .

I have friends overseas and I also want to get onto the Net—you know, find out about other places—pictures of other places and that sort of thing

I'd like to look for embroidery and craftwork websites and learn how to print them

Zoe then invited early adopter tutor Nan to join in, which she did with alacrity and enthusiasm:

I'm a member of ten online groups—most of them are to do with quilting and patchwork. Six are specifically Australian. The others are American groups, so I can help you there. If there's enough interest, we could have a special session at one of our centre meetings.

There are hundreds and hundreds of sites. I've got folders of sites you can find information about—I've shown some of them to the ladies in my Monday morning class. There's cross stitch, there's crochet, there's knitting and there's cooking, but my favourites are the quilting sites.

Zoe asked Nan which came first, the computing or the quilting?

Nan: Oh, the computing. I had a computer before I started quilting, but I'd been quilting for a couple of years before I found out about this wonderful resource that's available on the Net.

Ada: I've found tatting patterns and oh, recipes on Google search. I love cooking, but I only go to the computer when I want something as I'm pretty busy teaching crafts at the nursing home where my mother lives. Once I would go down to the library to find things out, but now I pop onto the Internet.

Hilda laughed as she recounted how she had wanted a recipe for salmon mousse for a special family gathering and found 35.000 recipes on Google in a fraction of a second. She explained how she printed out the first recipe on the list and it was so successful and looked so attractive that she took a picture of it to put in her recipe file. The induction sessions continued with a Power Point presentation. Timetables and induction packs were given out and bookings were made for the preferred sessions before the group broke up for refreshments and informal conversation.

GENDER EQUITY ISSUES

As in the research sample and in the wider community, women outnumber men in the assistant tutor, novice learner and focus groups in this research study sample group. The exception to this is found in the 3D early ICT adopter tutor group where there are more men than women. This is due largely to the division of duties in the early days of computing when men were involved in the installation and maintenance of technical equipment while the women were the keyboard end-users. The early adopter men in this study who used computers in the workplace have a nostalgic affection for them and have retained their enthusiasm for new technology. Quotes from tutors about gender differences follow:

Most of the men have a lot less patience than the women and are a lot slower to learn . . .

The women are a lot quicker at picking up things except CAD or programming—women are just not interested in that side of computing . . .

Men play games and set goals. They either want to play or do a job . .

Women are more open. They look for telephone numbers or garden information like “how do I look after this plant?” . . .

Women look up information about their own or others' health . . .

Men are marginally more interested in what's under the bonnet and building computers . . .

AGE DIFFERENCES

Age is not something that is considered in this study as the accent is on the effectiveness of the observed and reported training and support that fosters or inhibits the uptake of computer based technology. An example of biological age being more significant than chronological age was found as two women living in the same retirement village came to the Computer Centre together and sat side by side. One woman, who looked older than the other, needed much more help and could not retain instructions or remember work completed the previous week. The 'younger' woman, who came in each week having practiced work attempted at the previous session and always brought a list of questions or websites to look up, was actually nearly twenty years older than her classmate. This situation did not seem to worry either of them and they remain firm friends helping each other.

SUMMARY

Thumbnail sketches of sample participants were introduced as they were quoted or their stories were told. These stories give glimpses of the personal attributes, which drive much of the learning in this group, as external barriers are overcome by both self-directed and supported means.

The way older adults learn to use computers and access the Internet is introduced with examples of learning styles and preferences, which were overwhelmingly reported to be 'visual'. The motivation for older adults to seek ICT training and support is found to be family initiated in most cases, as children encourage parents to go online. Often, the gift of a no longer needed computer is accompanied by an initial Internet connection subscription. In some case, however, the motivation is triggered by altruism as community volunteer placements create a need to acquire ICT literacy. The friendly and non-threatening environment so conducive to learning is implied in the fly-on-the-wall glimpses of a learning session, a tea-break and a new intake of older learners at the Computer Centre.

The data about gendered attitude to computer technology shows that men and women are more confident, less confident, more adventurous, more cautious, keep trying or give up easily. These conflicting views and the comments by tutors reported above reinforce the findings that third age learners are a diverse group and emphasise the futility in trying to generalise about gender differences. I argue that the only

generalisation that can be made about third age ICT learners and gender or age differences, is that no generalisation can or should be made. The implication for trainers is rather the need to be aware of individual differences and to cater for these in later life learning situations as much as in any other age group. The section concluded with brief examples of gender and age differences as they relate to ICT literacy acquisition in this study.

RESEARCH QUESTION 3

What are the incentives for and the barriers to, learning about and via new technology in later life?

Key words about external and internal factors that are reported to foster or inhibit third age ICT learning:

incentives and barriers; attitude toward technology; older adults and digital divides; cost and availability; adult literacy; adult lateracy; accessibility; disability; age related impairments; social isolation; 'e' for exclusion; 'i' for inclusion.

In seeking answers to Research Question 3 about incentives and barriers relating to third age uptake of ICT, participants describe how their learning is affected by both the promotion of awareness of the benefits of accessing the Internet and the barriers that inhibit this access.

ICT UPTAKE BARRIERS AND INCENTIVES

This section records comments about barriers and incentives, however the barriers are not insurmountable and there *are* incentives, although these are not always recognised. This is consistent with the literature reviewed in Chapter 2. While 'IT' is now readily accepted as standing for information technology, when the 'c' for communication is added, the acronym ICT is not generally recognised (Taylor, Rose & Wiyono, 2004). E-mail is often confused with the Internet but all the older adults surveyed are generally aware that www stands for world wide web and that information on a wide range of topics can be found there. Those who have learned how to access the Internet and refine their Internet search skills are astounded and delighted at the extent of information available and the speed in accessing it.

I had no idea what could be found on the Internet . . .

The www makes just reading things in general, just a magazine or something, more interesting . . .

I look for the computer address on TV or in the paper and think, “oh yes, I’ll put that down on the list” . . .

You can’t help but notice the www hieroglyphics on the Telly and on the Radio and wonder how it all works

COST AND AVAILABILITY

Cost is an ever present inhibitor to computer use and Internet access by older adults.

This becomes apparent as home visits are made and the inadequacy of the older computers and the limited Internet access are noted. Cost barriers experienced and reported by some of the sample group interviewed relate to older home computers, which cannot be upgraded, lack of current software or no software other than the rudimentary programs that come when ‘pre loved’ computers are stripped and passed on. Another barrier is the cost of connecting to the Internet as well as the limitations of computers with minimal capacity, speed, storage and working memory.

I don’t have Word on the computer my daughter gave me and it’s so expensive, I can’t afford to buy it. . .

When I get home and try to practice what I learned today, everything is different and I get lost . . .

I haven’t connected to the Internet at home because of the cost . . .

Printing is so costly. The average person doesn’t have a lot of money to spare. . .

Printer cartridges are extremely costly. Very few have a generic alternative and some of them can’t be re-filled . . .

I don’t mind paying ten dollars a half hour for help, if something you want is actually done, but most technicians charge fifty dollars an hour . . .

LITERACY AND NUMERACY PROBLEMS

Low levels of literacy and numeracy are barriers to optimum ICT acquisition, as the majority of computer and Internet operations are text-based. Literacy problems tend to be concealed by the older adults, many of whom left school at an early age. Miss-spellings are laughingly passed off as typing errors and other strategies are employed to avoid drawing attention to literacy deficits. A lack of basic literacy skills is a limitation

for many older adults, however, in this peer group as others have similar problems, this is not emphasised. There are implications here for trainers, text-based course developers and website designers to provide a range of innovative material to suit different learning styles and different literacy levels.

ACCESSIBILITY

The following words are attributed by Foskey (2001) to a member of an education, ageing and technology e-mail list—‘a qwerty keyboard, a flighty mouse and tiny fugitive arrows’. These words sum up much of the frustration many of the older adults in the sample group feel as they struggle with unfamiliar hardware and with hand eye co-ordination difficulties in accessing user-unfriendly web-sites:

My first thoughts about navigating websites for information or entertainment are that I like simple uncluttered pages with well-defined links and large buttons to press rather than tiny little arrows and miniscule address bars where it is hard to see whether you have typed a full stop or a comma . . .

You need clear directions—simple hints—to get you back to where you were before you wandered off on an irrelevant link

Some websites are difficult to navigate because of instructions all over the screen making accessing information confusing and frustrating . . .

I didn't really get the answers I was looking for. I looked up gall bladder and I got everything from galls on trees to goodness knows what . . .

You look up something and you find the web site is out of date—the person responsible is not keeping it up to date . . .

ACTUAL AND VIRTUAL PEER NETWORKS

With Haddad's (2000) 'press of a button and flash of a screen', it is now the norm to watch, listen, talk and interact in global networks and quickly share information and experience gained in local community settings and vice versa. Virtual networks, whether real time chat sessions or time delayed discussions or list services, fill a post-employment void often experienced by older adults as actual networks shrivel, particularly for those isolated in rural and remote areas. A number of virtual networks exist in Australia and overseas, which have a special focus on third age ICT learning. The peer interest networks introduce and link second and third age people who are involved in some way with education, ageing and technology for mutual information

sharing and support. The importance of virtual networks in the lowering of social isolation barriers cannot be over-estimated as older adults find new interests and virtual friends in peer interest e-mail lists, chat sessions and discussion board participation.

The education, ageing and technology network, which paid an important part in my ICT research journey, has also been responsible for the arranging of the two collaborative research studies described and discussed in the last section of this chapter.

SUMMARY

There is more mentioned about barriers to, than about incentives for, the uptake of ICT by older adults learning in retirement. It can be argued that this is because the barriers are tangible and can be identified and tagged for attention by stakeholders. Incentives, on the other hand are often not significant enough to warrant comment or lodge in the long-term memory of the learners. Due in part to the high cost of press and electronic media promotion, word of mouth information from members is the way most of the Computer Centre students find out about the training and support opportunities offered. The main barriers reported by the third age learners in this study are:

- a lack of awareness of available, affordable, appropriate training and support to de-mystify the growing number of obscure web addresses in print and electronic media written in unfamiliar 'www shorthand';
- cost of upgrading inadequate computer hardware and software, often donated by family members, and of Internet connection and use;
- denial of accessibility to essential online information, not always available elsewhere; due to lack of user-friendly large print easily navigable websites;
- a lack of ICT literacy, which prevents older adult from joining in chat sessions, group discussions, virtual networks and online learning.

RESEARCH QUESTION 4

What are the ICT training and support implications for older adult learners, trainers, service providers, researchers and policy makers?

Keywords for this section, in which the focus is on training and support as it involves learners and trainers:

Awareness; opportunity; motivation; initial success; regular practice; use it or lose it; adaptive hardware and software; cognitive slowing; memory jogging strategies; modification of attitude toward technology.

Research Question 4, which parallels the title of this thesis, asks what the training and support implications are for learners, trainers, service providers, researchers and policy makers. The voice of learners and trainers from the Computer Centre are heard in this section. The implications for service providers, researchers and policy makers are spread throughout the results and discussion chapters as they are identified. This section highlights the training and support aspects of third age ICT learning through reports by both novices and experienced tutors at the Computer Centre. The participants are all lifelong learners at different stages in their new technology journeys. Some are new learners—later adopters; others—early adopters, have been involved with computing since its earliest introduction. As they come together in the informal community learning centre, they learn from each other in varying degrees.

THE LEARNER

Where there is motivation, initial success at short training sessions and small supplementary ‘weaning’ support, as suggested by Redding, Eisenman and Rugolo (1998) and MacKeracher (1998), negative attitudes towards technology can be positively modified. The following comments were made about a year after the remarks recorded in the Question 1 segment in this chapter, when Barbara and Laurie were observed in the beginners’ typing group. They have both since completed TAFE e-Learn word processing and spreadsheet units at the Computer Centre and attend monthly special interest sessions. They are chatting in the tearoom with assistant tutor Hilda, who completed the e-Learn course as part of her tutor training and now divides her time between the family history sessions at the centre and home-based ICT support.

Barbara: The e-Learn volunteers have been great. There’s nothing beats the face-to-face. If you’re feeling frustrated about something, the machine’s not going to say to you, ‘look don’t worry about it’, but a person saying that makes you feel better. I’m not sure how much use a follow-up at intervals would be. You need help when it happens—if you mess it up on Saturday you don’t want to have to wait till the next Friday. An e-mail help group would be good.

Laurie: I currently have three little part time jobs—they just came to me in the lounge room through e-mail—I didn’t have to leave the house. One job is running a personal relationship evening course, the second is a party plan and the third is relieving in the office of a timber firm. I have to use spreadsheets, which I covered in the e-Learn course, and though I’m a bit shaky at the moment, what I learned is paying off.

Hilda: Before I joined the e-Learn course, I tried to teach myself and bought a book for 'Dummies' but I didn't find it helped. I don't have any grandchildren near like some do. I think they are very helpful. At one stage I went to a beginners' class at TAFE that was full of young things. I didn't really learn anything there, but I've learned more in three months than in the last three years since the TAFE e-Learn course has come to us. We can learn among people who are the same age as we are and who help each other.

Evidence of learning about and via computers and the Internet is spread throughout the results and discussion chapters. The three examples quoted above are typical of the outcomes to be expected as third age learners take advantage of the opportunities offered in the adult community education sector. The outcomes are different and match the learners' current needs. Barbara is working on her family journal, mainly at home because of a mobility problem. Laurie has achieved her ambition to return to part time paid employment following a bout with a serious illness. Hilda is delighted that she can help others and expand her own interests at the same time. Comments such as these are useful in a member-run organisation action research cycle, which builds on successes, assesses and revises less successful aspects and plans new developments as needs are perceived and opportunities arise.

THE TRAINER

Nora: I teach as I feel. When I have a class, I like to be directing rather than helping someone else—like another tutor, but I do think that one-to-one is the best way to teach anyone.

Ada: I agree that we've got to watch that we get enough time to have one-to-one, but we also have to have some time that is not one-to-one for social contact. By the way, I hate the modern expression one-on-one!

Hilda: I believe it needs an amateur to teach an amateur. I know how I felt when I started. I try to help people who come in and look lost and then I keep a close eye on them while they settle in.

These comments by later adopter 2D-wide assistant tutors, who have arrived together for a tutors meeting, reveal an understanding of adult learning principles and empathy with the older adults who come to the Computer Centre as nervous novices. and serve to introduce the next section about the trainer.

FOCUS ON COMPUTER CENTRE TUTOR TEAM MEETING

After the Computer Centre students had left for the day, several other tutors arrived for a volunteer team meeting. The purpose of the meeting was to share ideas about how to help the new batch of older adult beginners to overcome their anxiety in using computers for the first time.

3D early ICT adopters Diana and Brian arrived together and were already in the tearoom catching up with Computer Centre happenings since the last meeting, as they are rostered on different days of the week.

- Diana is one of the youngest members of the tutor team, only just having achieved baby boomer status in her early-50s. Diana has tertiary computer qualifications and is semi-retired as she looks after the books as a partner in a family business. This gives her the time to devote to her two passions—family history and computer technology. This last includes everything to do with what is inside or able to be attached to or installed onto computers. Diana specialises in family history online and all aspects of photographic restoration and digital imaging. Diana travels many kilometres from out of town on her rostered day at the Computer Centre. She has a senior executive position in the management committee and is part of the tutor-team with purchasing and PC computer-health responsibility.
- Kath is an assistant tutor in her early-70s. She is a later ICT adopter who has moved determinedly from 2D-narrow to 2D-wide. She is very much involved in family history search, using her lately acquired computer and Internet knowledge and skills for her own interest and satisfaction as well as sharing her enthusiasm and growing expertise with others to help them trace their own family trees. When her husband died suddenly while on a fishing trip, Kath had just been nominated for the presidency of the Computer Centre. Kath recalls; “I decided to accept the position. All my children and grandchildren live in other states and the club which I have been involved in, is like an extended family”.

Kath ran her own small business in the days before electronic accounting and shuns e-banking and e-shopping. She, like many of her contemporaries is on an aged pension and not only has little spare money left over each fortnight, but also needs the security of seeing her bank balance in a pass-book:

I like to have a pass book and look up the balance regularly. On an age pension, I have to budget for everything, so I have to keep a close eye on finances.

Following her husband's death, Kath's 'grey nomad' lifestyle came to a sudden halt. She and her husband had set off in their campervan each winter following retirement, to

visit children and friends and to explore the warmer northern states. This sudden rolelessness is akin to the cliff-top retirement from employment referred to by MacErlean (2005). This is an example of role focus change and of multiple role community volunteer service filling a life stage gap and thereby avoiding what often can develop into a drift into social isolation following the loss of a close family member.

- Roy is a 3D early ICT adopter in his late 70s, who is a recent arrival from interstate, where he was a volunteer with a seniors' computer club. Roy's experience in a similar, yet differently run centre is very useful and he soon found a niche on the Computer Centre committee in the liaison role of representative at the regional inter-group volunteer support meetings. He is also helping Reg to organise the home visit computer help program.
- Reg is a 3D early ICT adopter in his early-50s who has TAFE Certificate IT qualifications. Reg coordinates the Computer Centre volunteer outreach home visit and telephone Help Line, allocating helpers with the appropriate expertise as the requests are received. He has a happy personality which belies the chronic pain he experiences from a debilitating muscular condition, which makes it impossible for him to walk without crutches or to hold down a fulltime, regular hours job. Reg's life revolves around the home visit program and his rostered day at the centre when he is senior tutor in charge. He recalls his early association with computers:

I must admit computing on DOS-based systems was not my favourite subject in High School. The first computer I owned was an Amstrad CPC464 in the mid-1980s. It had a cassette drive, rather than the floppy disks that most of us are familiar with. Each game or piece of software had to be loaded from an individual cassette. My first 'real' computer came in 1995 with a Pentium 2 running Windows 95.

The meeting continued as each tutor reported on the month's activities before Murray showed the group how to include hyperlinks in their Power Point presentations.

- Murray is a 3D early ICT adopter in his early-60s, who was involved with mainframe computers in his position in the office of a large government workshop. A self-directed learner, Murray merits inclusion in Roger's (1995) innovator typology and may be numbered among Adler's (2002) gadget freaks as he investigates each technological development and assesses it for use in his own life and those of his students. Unable to work full-time due to a back injury, Murray spends much of his time and his seemingly unlimited patience as he gently encourages his older charges in whatever area they are interested in. His extensive knowledge in a wide range of computer and Internet applications is invaluable to learners at all stages of their ICT journeys. ,

Jenni opened the meeting and quickly moved through the agenda to the training segment. The topic for the meeting was how to help several of the students in the two

new groups to overcome their anxiety. The first group was composed of novices using computers for the first time; the other was an 'advanced' group, which was about half way through the structured course material. The beginners' group agenda item was quickly despatched as no problems were reported and the current e-Learn course progress was opened for comment.

Brian, as usual, was first to comment. He said he was sure that some people worry too much and that they were frightened that if they press the wrong key combination, "a cloud of smoke will rise". Nan asked him if he thought that a simpler software program with just enough instruction in it to meet the needs of absolute beginners would be useful. Brian declared that most of the new programs were just too smart, and that the older programs were better—"although much cruder", he added.

Diana remarked that as her beginners were all so different from each other, she didn't see how you could have a program to suit everyone, which is why she designed extension sheets to keep the faster ones happy till the others caught up. She then caused a stir by declaring that "most people don't want to learn word processing—they really only want to e-mail their grandkids, make greeting cards or look for their ancestors".

Jenni brought the discussion back to the day's main topic, the new e-Learn online group by commenting on the specific reason one of the students had for enrolling in the structured e-Learn certificated course:

Take Madge, for example. She has dropped out of the course and is coming in next week to see if someone can help her at home on her own computer. Madge was a primary school teacher before her retirement and goes into the outback each year as a volunteer home schooler to isolated children.

"Ah ha," exclaimed Nan, "so that's why she was so keen to learn such a range of different things about the computer and the Internet".

"Yes", replied Ada, "but Madge is not really comfortable with the online self-directed learning and is constantly frustrated when she gets lost and can't instantly get help. She's not at all keen on exploring and likes everything written down in minute detail".

Nan added that Madge writes reams of notes and then bewails the fact that she can't understand what they are all about. Roy surfaced from his reverie and suggested some simple checklists Madge could take away with her might help her and her pupils.

Roy: Re learning computing, it's probably stating the obvious, but I reckon there are about as many learning slivers as there are people learning IT who make up each individual learning map.

Nan: I like the idea of a learning map - I'll think about that one when I start my next group and I love Roy's 'slivers'. It explains why I have such a problem when I'm trying to assess students' learning styles. I mean why there is so much difference between people with similar education and employment backgrounds.

Kath had been sitting quietly and now suggested that it could be an anxiety thing with Madge. She continued:

Madge knows that the children she is tutoring will have a far better grasp of computers and the Net than she can hope to master in the short time left before she goes off on her travels again.

Jenni asked if some checklist cards could be printed out with basic generic principles of say, word processing and simple Internet searching. Kath continued, "You don't know what systems and applications people on those remote outback stations have". Jenni agreed commenting that "it's only adding to her distress, trying to push her through the e-Learn course she's struggling with and having to learn things she may not need." "The problem is," Diana mused, "how to do this without causing her to lose face in the group". Ada put forward a solution to this problem:

Von sits next to Madge and has asked me to come in to give her some special help as she cannot remember what she's learned from one session to the next and it's getting to her. I can help Madge at the same time without it being obvious and I'll take note of what the main problems seem to be for both of them.

Jenni listened as the tutors contributed ideas for overcoming this problem. Nan too was visibly relieved as she exclaimed:

That's great Ada, I have been finding it hard to get to those two as much as I should, with so many others having such different hang ups. If we could have one helper between each two students, it would be almost as good as one-to-one.

Diana brought up the matter of members' home computers not being the same as the ones they use at the centre and how it throws them. Nan pointed out that it's the same when they go to the library or more formal adult education or TAFE courses or when they're away and have to use Internet cafes or public online centres.

Nan: That's why I have a session on basic principles before each new segment and tell the class to focus on the destination, even if the way they get there is different on different computers. This works well with the more adventurous students, but it's a bit daunting for others.

Kath: We know what is needed but don't always have the time to do it. It's a question of encouragement. If people are told they can't do things, they soon begin to believe it and stop trying.

Diana suggested that as Adult Learners Week was coming up soon and there was an inter-generational theme this year, the Centre could take up the offer of Lakeside High's Grade 9 students to pair up with our seniors:

They can see what the problems are and produce some checklists for the different platforms and applications as a group project.

Roy: We could apply for enough funds to cover the cost of printing them and also producing them on CDs for our library."

Nora said she would be happy to invite the students to meet her class, who were looking for some real-life word processing projects. Jenni placed this item on the agenda for the next meeting and invited other tutors to e-mail comments. She thanked the tutors for their attendance and reminded them about the new volunteer home visit project being set-up by Reg. The program, funded by a philanthropic grant, was designed to assess the needs and non-technical problems of members in their home settings and to suggest options if their problems were outside the home visitor's expertise. Jenni apologised for Reg, who was not well enough to come in to the meeting, explaining that he was busy setting up the home visit program and would give a full report at the next tutors' meeting.

Following a demonstration of newly acquired Apple Mac drawing software given by Ian, the pizzas arrived and the meeting was officially closed. The next informal hour provided an important opportunity for tutors to network. The social interaction provided by the after hours gatherings at the Computer Centre is just as important for the tutors as for the students. Bonding is rapid in this group as new tutors are welcomed into the tutor team and regular counter-teas and special occasion dinners, which include partners and friends, are held. One such occasion is the certificate presentation by Marian at the end of each e-Learn course. In some cases, this is the first time some of the students have actually met their online TAFE tutor.

SUMMARY

This section focussed on ICT learning from the perspective of the learner and the trainer. The learners in this study came to their training and support venues by word of mouth or through membership in community networks, but are a very small proportion of the learners in this regional ageing learning community. The trainers in this study are all volunteers and have a genuine interest in sharing their skills and knowledge and helping the older adult learners with whom they come in contact.

The implications for learners and trainers, and indeed for service providers, researchers and policy makers are implied, not only in this research question but throughout the reporting of results and the discussion of the data analysis. Analysis of the words of the participants in this study indicate that awareness of ICT and motivation to seek and find appropriate training, coupled with initial and ongoing support leads to older adults having a positive attitude toward new technology and results in their achieving outcomes which match their expectations. These third age lifelong learners are building the community social capital, which is the focus of the next section, as they freely and enthusiastically share their knowledge and expertise with their peers.

RESEARCH QUESTION 5

How do the skills, knowledge and information gained from accessing computer technology, add to community social capital?

Keywords in this section relate to the social capital generated in the community by third age ICT learners:

Diversity in retirement; variety of interests and needs; ICT interaction; bonding within groups; bridging between groups; linking between individual micro and government macro levels via meso community NGOs; human capital; social capital; volunteerism.

DIVERSITY OF INTERESTS

This section looks at the beneficiaries of the diversity of learning undertaken by adult men and women, who are interacting in retirement with ICT in the fourth adult community education (ACE) sector. Retirement from the paid workforce or parenting has come to be accepted as a time of fulfilment with the time and the money to pursue recreational activities or to dabble in hobbies, to travel or to pursue informal learning or formal study, or to engage in community volunteering.

The benefits of ICT literacy acquisition to learners and their families are seen as Computer Centre tutors Diana and Zoe share their genealogy and graphic art expertise. They encourage interested learners to use their new ICT knowledge and skills to produce sophisticated family histories and personal and extended family records set in social history frameworks. The older adults surveyed acknowledge the personal benefits to be gained from learning to use a computer to access the Internet. These benefits cover a wide variety of craft and hobby activities as well as formal and informal study for both intrinsic and extrinsic reasons, and also volunteer involvement.

Yvette: I certainly know a lot more and I certainly realise the potential for people who are into family history.

Kath: I've gone ahead in leaps and bounds since I've learned how to access family history online.

Hilda: People contact me more than I contact them because I've got a home page through Free Servers.

Roger: My wife broke some of a wedding present dinner service and we found spare pieces by an Internet search.

Tina: Through my research on the Net, I found out that a Cornish family history festival is held in Adelaide every two years. Everyone dresses for the occasion and of course there are Cornish pasties.

Social capital can drain away for some when work-related networks shrink (Warburton 2004) or disappear overnight (MacErlean 2005) and are not replaced by third place alternatives (Oldenburg 1997; Falk, Golding & Balatti, 2000). This move to replace rolelessness (Rosow 1976) with agelessness (Throssell 2004) is found as the third age ICT learners in this study quickly seek new community NGO service and study opportunities, to the benefit of themselves, their immediate family and friends and, through volunteer involvement, strangers. A blend of actual and virtual community learning is a cost effective way to counter post-retirement social isolation. Facilitating the uptake of technology by those who left the education and employment spheres before computers and the Internet were a part of every aspect of life, enables those who become technology literate to blend actual and virtual learning and participate in learning communities. Warburton (2004) finds that social networks tend to shrink as you age and advocates helping others by volunteering to counteract this. Louise, who has reached out into the community through volunteer service, reflects on the benefit of

ICT interaction in counteracting the alone-ness that comes from the loss of a close family member:

For many of us, the twenty-four hours a day close communication with someone, the 'I – Thou' relationship is no longer there, so the Internet via the computer, while it cannot be compared, never-the-less is a bridge between loneliness and social inclusion.

I have a sister-in-law who's not a great mixer and the Internet would be a big interest for her. She'd be quite capable but she doesn't want to eat into her savings. On the other hand, social isolation is not only confined to the elderly, nor is the Internet the answer to all disengagement problems.

VOLUNTARY COMMUNITY SERVICE IN RETIREMENT

The assertion that many older people who begin as students in community programs subsequently make voluntary commitments to help others as found by Falk, Golding and Balatti (2000) is borne out in findings in the current research involving third age learners accessing new technology.

Kath, Ada, Hilda, Nora and Yvette are five of the later adopter learners who stayed on at the Computer Centre after they had learned enough about computers and the Internet to help others less experienced than they were themselves. All the sample participants who volunteer in some way at a variety of community service organisations and sporting or recreation clubs use their ICT literacy knowledge and skills.

There are many and varied opportunities for micro transformation through volunteer involvement as reported by individuals like Louise who promotes healthy ageing by supporting community groups that facilitate the uptake of technology among older adults. Nora and Hilda move between community seniors' ICT training programs, while Wendy and Jill are involved in telephone counselling, recording books for the blind, mentoring and charity fundraising.

SUMMARY

The range and variety of ICT basic and specialised ICT end-use applications reported by the third age learners in this study are indications of diversity rather than homogeneity of the cohort broadly stratified as the third age (Laslett 1989) by virtue, not so much of chronological age as by retirement from paid employment and/or parenting, a life stage categorised as 'post work' by Withnall (2006).

Benefits from exposure to ICT training and support are reported to flow from personal enrichment and to family and friends and through volunteer effort to strangers in the wider community. The social interaction, which ensues from participation in actual or virtual ICT networks, is a positive ageing strategy to guard against the loneliness which occurs as people age and lose physical mobility. Loneliness also occurs with the loss of a partner and the attendant social safety net or when close family members move away.

An interesting divergence in results from a survey of Canadian and Australian older adult ICT learners, is reported by Fraser (2004). The survey finds in the area of community volunteering, that while volunteering is a regular activity reported by 44% of the respondents in the combined samples, it ranks lowest among preferences for the Canadians and highest for the Australians. Fraser (2004) suggests that the lower incidence of volunteering in Canada may be due to the inclement winters in that country. On the other hand, she accedes that the difference may result from an interpretation of the term 'volunteering'. Canadians may participate in more informal and less organised volunteer activities than in Australia. In other areas of inquiry reported in Fraser's analysis of the surveys, older adult ICT learners in both countries have a very similar pattern of e-mail communication and Internet searching, and in participation in lifelong learning, physical activities and leisure pursuits. Very strong agreement was reported by the respondents in both countries for the social experience of learning, and strong agreement was expressed for family support. Total data from both samples illustrate that older adult ICT learning programs are beneficial to the life-worlds of this collaborative study. Fraser (2004) suggests that social gerontology, adult education and older adult learning are avenues for further investigation to clarify the scope of research in these areas.

CONCLUSION

This chapter aired comments made by, and described the experiences of, early and later ICT adopters, who are at different stages of their two and three dimensional narrow and wide adult literacy ICT journeys, whether they are just beginning or are technically well advanced. The older adults in this sample appeared to be at different stages of their ICT journeys, although a number of learners in a group may be travelling in the same direction towards the same destination, for example, in a family history online class. Some of the class members are coded as 2D-narrow as they need someone sitting

beside them to help them at every stage of their search at every class they attend during a protracted period. Other members, who are classified as 2D-wide, only occasionally ask for help from the tutors and bring in work they have completed between sessions. These 2D-wide learners are soon co-opted to help others who are struggling. The tutors, who are specialists in this area and have a great deal of experience, are classified as 3D in the adult lateracy coding classification.

Cognitive ageing and age related impairments were examined in this chapter. Strategies devised by sample participants to counter dimming memories were reported, such as ICT-related making of lists, the use of reminder-markers on computers, highlighters on texts, alphabetical computer document lists and general reliance on family and friends to remind them of appointments. Light-hearted sharing of stories about forgetting is common. The need to communicate with family by e-mail was given by most of the older adults in this study as the initial motivation for acquiring ICT literacy and the reason for their broadening their computer and Internet use to include a range of other online interactions.

Participants' comments about how they learn include those about learning styles and preferences, which have special implications for trainers. Some of the triggers that motivate the decision to seek training are linked to the encouragement and support from family and friends. Gender and age differences were explored, but not found to be relevant, as the older adults showed how their learning matched their needs and interests.

Barriers to ICT use and Internet access were outlined, as these were more often mentioned than the incentives. The cost of computer hardware, software, printing and Internet connections were nominated as disincentives most often. The cost of training and support was not significant as the older adults in this study are taking advantage of the nominal cost community volunteer supported training and support options. The importance of actual and virtual networks for third age learners was found to be useful as a hedge against social isolation but not widely used in the early stages of ICT acquisition.

The experiences of learners and trainers were glimpsed as new learners and tutors met in separate focus groups. While the social capital bonding was observed to occur very

rapidly and smoothly in the ongoing Computer Centre courses, social contact bridging networks between community programs was apparent in focus groups where participants had not met before. Biological rather than chronological age was found to control the ability to critically reflect on physiological and psychological readiness to accept or reject challenges and is part of the life journey of each individual in this study.

Researchers' findings (Irizarry & Downing 1997; Williamson, Bow & Wale (1997; Redding, Eisenman & Rugolo 1998; Mott 2000; Fraser 2002, 2004) were confirmed, that where there is motivation, initial success at short sessions and small supplementary 'doses', the most negative attitudes towards technology can be positively modified. The raising of the self-esteem of individuals, which ensues from the learning of new technology skills, benefits the learners themselves and their family and friends. The confidence gained from being ICT literate in a modern technological society enables older adults to be independent and maintain physical and mental health and to be better equipped to offer their new skills and knowledge to others in the community. The findings from the data gathered from this research project and from the Canadian/Australian collaborative study, confirm that a community inhabited by lifelong learners generates benefits for individuals, groups and the wider community as the participants acquire skills they use in their daily lives or their community volunteering activities (Falk, Golding & Balatti 2000).

There are implications for service providers from the data gathered and reported in this section. The third age cohort is not only as diverse than any other younger cohort but it also contains more lifetime experience by virtue of its members having lived long and varied lives. This experience can be drawn on by service providers and policy makers, to help in developing and funding bottom-up rather than 'off the rack' top-down courses (Wickert 1989; Moran 2005) and should be recognised and respected by trainers. Another implication for policy makers is the benefits to be gained by sponsorship of third age ICT literacy acquisition research. Second age policy makers' rhetoric is not always found to be matched by grass roots funding assistance for third age community ICT training and support groups. These NGO groups, largely staffed by volunteers, are unable to reach more than a small fraction of the older adult non adopters of ICT who would benefit from this interaction if given the opportunity.

In Chapter 5, the next results chapter, the majority of the focus group, case study and document analysis narratives are from sample group participants not connected with the Computer Centre.

CHAPTER FIVE: RESULTS
FOCUS GROUPS AND CASE STUDIES

INTRODUCTION

In this chapter, findings from interview transcripts, focus groups, case studies and participant journal excerpts are reported, employing a narrative style. From an analysis of transcripts of the data gathered from semi-structured interviews, the peer interest focus groups and the individuals and couples featured as cases for study in this chapter, were identified. The ‘groups’ range from individuals who tell their ICT learning journey stories, to participants in focus groups, one composed of executive members of a number of NGOs and the other of older adults who have commenced or returned to post compulsory or post graduate formal study. Pam, a Computer Centre member and volunteer adult migrant language tutor, and Queenie, a volunteer tutor in creative writing at a seniors’ school, reflect on their association with technology. Alf and Jael, a husband and wife cyber-senior partnership, talk about ICT as it impacts on their personal and community retirement activities.

Table 5 on the next page contains the details of the 23 participants in the sample group participants who make up the balance of the total sample of the 50 third age learners in this study and are involved in focus groups, case studies or as mentors. As in Table 4 in Chapter 4, Table 5 shows age group, pre-retirement occupation and classification following the tri-coding of the data, length of experience, focus group or case study status and adult literacy ICT status, as at the end of the research period. As in Table 4, an asterisk beside a sample member’s name in Table 5 indicates participation in the Hazzlewood and Kilpatrick (2001) study. As with the Chapter 4 Computer Centre participants, the Internet journeys of these outside entry group are discussed, in this case in Research Question finding 1.3 in Chapter 6.

GLOSSARY FOR TABLE 5
AMES Australian Multicultural Education Service
FE Further Education
NGO Non-Government Organisation

TABLE 5: FOCUS GROUP/CASE STUDY SAMPLE CHARACTERISTICS

4 FEMALE 2D-WIDE EARLY ICT ADOPTERS		
Pseudonym	Previous employment	Focus group
Bertha mid-70s	Commerce Teacher	NGO
Lorna early-70s	Hospital Clerk	NGO
Rita late-60s	University Lecturer	NGO
Sally late-50s	Social Worker	NGO and Mentor
1 MALE, 2 FEMALE 2D-NARROW NON-ICT ADOPTERS		
Merle early-70s	Commerce Teacher	NGO
Patrick* early-80s	Bank Employee	NGO
Queenie early 60s	Writer/Poet	Case Study
1 MALE, 2 FEMALE 2D-WIDE EARLY ICT ADOPTERS		
Fiona late-50s	University Lecturer	FE and Mentor
Sheila early-60s	Family Business	FE
Ted late-60s	Primary School Principal	FE
1 MALE, 2 FEMALE 2D-NARROW LATER ICT ADOPTERS		
Helga early-60s	Housewife/Parent	FE
Les early-70s	Farmer	FE
Wanda early-70s	Housewife/Parent	FE
2 MALE, 2 FEMALE 2D-WIDE EARLY ICT ADOPTERS		
Alf late-60s	Insurance Agent	Case Study
Jael late-60s	Nurse Educator	Case Study/Mentor
Freda* mid-70s	Commerce Teacher	AMES
1 MALE 3D EARLY ADOPTER		
Karl* late-70s	Electrician	AMES
1 MALE, 5 FEMALE 2D-WIDE EARLY ICT ADOPTERS		
Bridget mid 70s	Author/Housewife	AMES
Enid early 70s	Legal Secretary	AMES
Henry* late 70s	Technical Teacher	AMES
Marian late 50s	Adult Literacy Tutor	AMES/Mentor
Nola early 60s	Clerical Worker	AMES
Wendy* late 60s	Health Centre Receptionist	AMES
6 MALES, 17 FEMALES – 23 OF THE TOTAL SAMPLE OF 50		

FOCUS ON COMMUNITY GROUP VOLUNTEERS

THE GREYING OF THE NGOS

Many non-government organisations (NGOs) are reported to have similar problems—member decline, few takers for executive responsibility, finances constantly teetering towards the red and in some cases, dissolution of longstanding niche associations for lack of the obligatory quorum. Members of this NGO focus group report that a glance around many mixed and same gender organisation functions they attend show that the word ‘older’ could well be added before the group names, as recruiting of younger members just does not seem to be an option. The isolation of many frail aged people is accentuated as the older active well-aged community volunteers struggle to keep the NGO executive and grass roots service flags flying with less time for family, friends or indeed long-anticipated leisurely retirement pursuits. A widening gap between the generations is reported as potential younger adult members remain on the two-income family treadmill. The ‘sandwich-generation’ grandparent cohort is showing signs of time stretching as grandchildren babysitting, elderly spouse or sibling care and extended or continually recycled committee service erode personal quality home-based activities and health and well-being regimens.

As a report on volunteering in Australia (Barnett 2002, p.10) comments, “retirees are highly skilled and experienced; many often struggling to cope with a diminished retirement income”. Barnett sees volunteering is an excellent way of providing opportunities for older people to contribute to society. Barnett, as does Warburton (2004), suggests that through this volunteer involvement, society is able to further tap into the knowledge, experience and skill base of older adults and declares that no one should have a ‘use by’ date.

Louise, who is an active member of the Computer Centre featured in Chapter 4 and Lorna, Sally, Rita and Bertha have all experienced role changes as their family and working life circumstances have changed, but rather than disengaging from society, they have found new roles in the volunteer sector. Dot points introduce them progressively:

- 2D-narrow later ICT adopter Louise, long widowed, by no means the youngest of this NGO focus group is the epitome of agelessness as promoted by Throssell (2004). After an early career in science education and later family

nurture, she is in demand to sit on state and federal consultative boards. Louise writes papers on geriatric health for scientific journals and letters to the Editor about local environmental and healthy ageing concerns. She is a talented needlewoman who recently journeyed along the Silk Road with members of her embroidery guild.

- 2D-wide later ICT adopter Lorna, widowed for several years, enjoyed a high profile public life with her politician husband. As her busy lifestyle changed and her children married and moved away, Lorna found new multiple roles as she volunteered in a number of NGOs and church groups. She is currently serving as state president, local secretary, newsletter editor and national conference delegate in a national women's organisation.

I went to the Online Centre to learn the Internet. Now I'm secretary for three different organisations and word process the newsletters and all the correspondence. I use e-mail to receive contributions and also distribute the newsletters and minutes to those members who are on the Net.

Louise and Lorna move freely and often through Putnam's (1993) voluntary associations meso community level, and with Sally, vertically in the hierarchical national and international networks in their various roles as members of local government, state and federal working parties, as delegates to conferences and as executive members of a number of linked NGOs. At the micro level Louise is a Computer Centre eLearn graduate who continues to learn in this peer ICT learning group for seniors as time permits. She serves as patron and mentor for the Computer Centre, wearing another of her NGO hats as regional president of a women's association. Sally sits on a number of government boards in an honorary capacity and has a valuable role as mentor to staff at several women's shelters.

- 2D-wide early ICT adopter Sally taught in High Schools for some years after graduating with an Arts Degree. Following a mid-career change to specialise in social work, Sally completed a second degree before working to establish learning centres for disadvantaged men and women in low-socio-economic areas. In retirement, she sits on several government boards and NGO management committees.
- 2D-wide early ICT adopter Rita, who has an Education Doctorate, is an energetic former university lecturer and, in retirement, an author, recording the history of the district her forebears settled in early in the mid 1800s. Rita is state secretary of a seniors' association and voices some of the frustrations of this group of third age volunteers who work in an outdated hierarchical NGO structure where many honorary office bearers and general members are not online or even ICT literate.

- 2D-wide early ICT adopter Bertha, a retired trained commerce teacher, home hosts young international students as well as looking after grandchildren while one of her daughters is undergoing long term hospital treatment. Bertha is local secretary of the same seniors' association as Rita and echoes her disappointment with the small percentage of ICT literate executive and general members

In a spirited discussion about the merits of email communication, Rita and Bertha join with Louise and Lorna in voicing their frustration that such a small percentage of the executive and general membership of their groups are ICT literate. This comment, which is reiterated by many of the NGO executive-level members, confirms Lenhart's (2000) assertion that older adults are the largest group not online rather than the claim that more and more older adults in are going online (McFarland 2001). Rita voices the general consensus viewpoint about online communication use among NGO general membership:

Rita: As State Secretary of a Seniors NGO, I find the next level up do not email the secretaries. They go directly to the president and it makes it very difficult to keep a record of correspondence because you have to wait for the president to bring it to you and it's all in these tiny little strips – conversations backwards and forwards and sometimes the same things are repeated over and over again – because they just put it in a string - it all sits in a long string!

Lorna: I find you can e-mail up and at peer level but not down. So many members are ageing and not likely to connect to e-mail. It may change if and when younger ones come on. There are not enough members computer literate to make online communication feasible.

Bertha: I asked the branches to nominate recipients to receive e-mail. There were only six positive responses. There are heaps of members well able to afford computer and Internet connection, but not many are online. Postage is such a killer so it would be a great saving to be able to send the newsletter out by e-mail.

Bertha: Getting your minutes and financial statements by e-mail saves the senders money, but of course you have to use your own printer and paper if you want to keep a hard copy. It's a shrewd move.

Louise: Having to print things out is a cop-out. We use e-mail, but at whose cost? Printer cartridges are expensive for the older community volunteer who doesn't have a lot of money – not all printers have a generic version.

Lorna: I use e-mail for secretarial mail. You learn these things and you just earn yourself more work. I e-mail minutes to a few of the

members who can then print them out. I use Word but not Office. I use Publisher to make cards and some other things I can't just think of at the moment

Rita: Technology has actually made it more difficult for me. They have asked the branches if they like to be contacted by email and the majority of branches said 'no'. In Tasmania, one of the presidents goes into the local Online Centre once a week and checks email, and that just isn't good enough, so he wants them to send the mail to him because he gets it more quickly as so few have email access at home.

Lorna comments that without computing and Internet skills, she would not have taken on secretarial responsibility for a number of different groups. She echoes the positive views, however, of many of the NGO focus group members that the new ICT skills that continually have to be learned, have definitely enriched her life and that the Internet opens up new horizons. As the conversation turns to the topic of change, not so much that change is occurring, but rather that there is a need for a change in attitude by the community gatekeepers.

Louise: To bring about change, you have to have the various government departments on side. Sub-sections and sub-sections of sub-sections do not always communicate. If you get a blocker or come up against power struggles, you're in trouble. You then have people in positions to make decisions who don't attend meetings but send a representative. It's a brave person who can bring about a systems change.

Lorna: The coffee table Policy Glossies about whole of life learning state that it doesn't matter where the learning is. They all use the same wonderful words. What I'm looking for is the evidence of trickle down and also whether the bottom up input is included.

Louise: The way forward is for all to go in the same direction, to form cultural partnerships. There've got to be people who'll listen and act. I'm being listened to and am able to bring about changes at the meso level, but it's not so easy at the macro level.

Bertha: After I left work, I didn't touch a computer for three years until it got to a desperate situation with all the work I had to do as secretary for the seniors' association I joined for relaxation!

The question about learning styles and preferences brought a rush of answers from these busy ageless older adults;

I learn exactly as I learned when I was a child . . .

I'll have a go at anything . . .

I'm not very good at concentrating when I'm listening . . .

I read about it, mull it over to work out what it means
and then I talk it over with someone . . .

I'll have a go at anything but realises my limitations . . .

I have an Idiots Book, but you need to be an idiot to understand it so I
ask for human help when I need it . . .

I use all the senses I have to help me remember what
I am learning . . .

You pick up skills as you need them. As you get more confidence,
you try more complicated things . . .

Merle and Patrick had not met before the focus group and volunteer their free time in different community groups, but they fit neatly into Roger's (1995) laggard category as far as the Internet is concerned. Although they use computers in their volunteer activities, they have no wish to join the Super Highway traffic at this stage of their lives. This situation may or may not change as their lifespan kaleidoscopes patterns change. These reluctant third age ICT learners may even leap frog their peers as adopters of technologies not yet imagined, or they may be satisfied and arguably be entitled to preserve the status quo. The lack of interest in online communication and interaction by the non-adopters of ICT in this study, in part, may be a way of disguising their lack of understanding and skill in using it or it may simply be an absence of need or relevance in their lives. Assertive, rationalised non-adoption of ICT as reported by Merle and Patrick does, however, add weight to the plea by a number of the participants for a transition 'choice without penalty' period between the old and the new, particularly in relation to conducting financial transactions.

- 2D-narrow later non-ICT adopter Merle is secretary of a pensioners' group. She is confident and competent in her computer use for her secretarial duties, which do not call for online communication. Merle has no interest in e-mail as all her immediate family lives within close range of her home. Merle is a 'sandwich-generation' grandmother with both grandchildren baby-sitting commitments—as her daughters both work full-time—and the responsibility of caring for her elderly mother.
- 2D-narrow later non-ICT adopter Patrick has no need to use online facilities as his wife handles all family e-mail communication. He explains he has little desire to surf the Net as he is an Honorary treasurer for a cluster of men's groups and attends 2 or 3 meetings a week and plays bowls once a week. Patrick uses the computer to prepare spreadsheets and financial statements, but needs to use over-the-counter banking facilities for depositing subscriptions.

Patrick: I worked in a bank before I retired and I know how much human error there is. Besides, as I'm treasurer of a couple of community groups, I have cheques and cash to bank after meetings, so have to go to a bank branch and while I'm there, I do my own banking.

Merle: I'd rather get some exercise and go to the local shopping centre and talk to a real live person over the counter.

Patrick: The banks encourage people to use Internet banking by reducing online banking charges, but I think older people should be allowed to choose which way they bank. It's their money.

Merle: Many elderly people won't use ATMs because they don't trust the machines or are afraid of being mugged while they stand in the street waiting to get their money. Many, like me, use cash because we can see what we are actually spending.

A topic that recurred during this research project in all the groups was the matter of time or rather the lack of it in retirement, and in this group it is introduced by Merle:

For the average person who is active in the community, time is the primary factor. Not everyone wants to sit at a computer for hours at a time. I just don't have the time in my life to play around with something I don't need—I have no intention to connect to the Internet.

Bertha: I look up things for the grandchildren's projects and also things for the family as a whole, but I really haven't got the time as I do a lot of community work.

Patrick: I have the time but I don't have much need to go onto the Internet although we are connected. My wife keeps in touch with the family and friends and that keeps her out of mischief when she's not busy at her ladies' committee.

Merle: I have no need and I cannot see one in the foreseeable future. I use a computer all the time as I'm secretary for a seniors' group and word process agenda and minutes and all the correspondence required.

Lorna: I search by looking up addresses and follow links normally, because I don't have a lot of time either. I just look up what I need.

The conversation moved to training and the learning experienced by most of the members in this group is similar to that of other early adopters who learned on the job:

Rita: The only computer training I did was on a new iMac in South Australia at a workshop. I just did what I was told. There were about thirty people there, mostly people over fifty.

Bertha: In the eighties we got one Apple Mac for the whole commerce department. Another teacher and I attended a course at the university, mostly programming and that sort of thing. I dropped out after six months as a single parent with five children. Then we went two hundred miles each way to Hobart seminars twice a months for six months.

Sally: In the eighties, my husband was very keen on computers but I didn't want to know about them. Then when I did my mature age social work degree I was forced to find out. I went to one computer tutorial about saving files. I didn't know files or folders existed. I was on my own after that except for help from my husband.

Lorna: I take notes—not of anything I know—just what I need to remember. I don't find the Help Menu very helpful. You have to know the right questions to ask.

Sally: I use the Internet all the time. I search for things like ABS stats and community development projects and their outcomes across Australia and overseas. I search with a purpose but I also follow up links from random searches. I also find the online Help menu is quite useful once you get the hang of it..

Lorna: The family got involved in computing at work and persuaded us to get a computer about 1991, a 486 I recall it was. I went to a couple of Adult Education courses, weekend ones in 1991. Then I went to the Online Centre to learn the Internet. I quite like the weekend courses, but it all depends on the teacher.

Rita: I'm well on the way with my second book since I retired. It's about the history of the Valley. While I was still working, I entered the text of a whole book and nobody took any notice of the safety aspects of working on a computer for hours at a time. I have multi-focal lenses and the end result was that by the time I retired, I had neck and shoulder damage that took two years to correct.

Rita is an intelligent well-educated woman who is volunteering in the community in retirement, but who is completely frustrated and disillusioned by the computer upgrade treadmill and also the lack of affordable and when-needed in-house support. Rita is coming to terms with having to manage her new computer and software without having a friendly technician down the passage, as was the case when she was still at work.

Rita: I think one of the problems for older people is that you are pushed to upgrade—you are made to feel that you really should be with the latest technology if you are beyond the learner stage.

Bertha: When I got my new computer, a young friend set it up for me. He said "just watch me", but he didn't really tell me what he was

doing and it was too hard to follow. It's frustrating and makes you feel a bit stupid.

Rita: Doing an upgrade, I thought, would allow me to have the very best and latest technology. What I've actually got is a computer that is very difficult for me to operate and do the normal tasks I want to.

Louise: I have a young relative who comes in to help me when I'm stuck, but in some ways, that is a disadvantage, because I now rely on him, instead of making the time to go through the eLearn course notes before I forget what they're about.

Sally: I had problem with a new operating system. You need to be in a supported position to be able to use it properly. People who are retired are not all in that situation.

Rita had the last word on this subject as she declared with a twinkle in her eye "you really need a live-in technician on hand—preferably young and male!" This opened up another topic—that of NGO succession planning. Louise explained how her women's group was overcoming the lack of new younger members:

This initiative is an example of innovative lateral thinking by an older woman who refuses to accept the stereotypes of old age and the pressure of long-standing members that 'we've always done it this way'. This model is also an example of another application of the window shopper typology, which participants in this study use in a wide variety of informal learning situations.

SUMMARY

A number of issues relating to Research Question 1, older adult learning in the technological age, were raised by members of the NGO focus group. These third age volunteers are shown to lead full and interesting multi-role lives that belie the stereotypes and myths of ageism. Theories of ageing that most nearly match their volunteer involvement are the activity, the continuity and the role change theories. The theories that have no relevance to this group or, in fact to any of the other groups surveyed, are the age stratification and the disengagement theories.

Two main issues emerged above all others in the NGO group—time and cost. The twofold issue of time constraints is reported by this group of older adults to prevent them from accomplishing all the things they had thought to fit into their retirement years. Time stretching occurs firstly as there are too few younger retirees joining many of the NGOs. This results in too few older adults having to fill too many multiple

executive roles in too many peer interest organisations. The other time constraint occurs as although the national secretariats communicate electronically with state and regional honorary executive members, not enough of the local hierarchy and general membership of NGOs have home Internet connection or even email addresses. The dependence on telephone and snail mail increases the time needed to cope with the already heavy workload of the ICT literate executives. A secondary issue is connected with the first in that the resulting inability of executive members to take advantage of cheap speedy online interaction increases the costs of printer cartridge and stationery for which they are not always fully reimbursed.

Research Question 2 asked how ICT literacy was acquired. The early ICT adopters in this NGO focus group learned to use computers and the Internet as early as their ages enabled them to do so, in circumstances of ad hoc and inadequate workplace training situations followed by self-directed trial and error methods. The later ICT adopters seek a variety of training and support options to enable them to acquire the computer and/or ICT literacy to match their current needs.

The incentives and barriers to ICT literacy relating to Research Question 3, which are experienced by all the members of this group, stem from a time-limited lifestyle that is delicately balanced between family and community volunteer obligations. The incentives are related to the satisfaction gained from community service and the related social interaction. The barriers expressed are again lack of time to practice skills learned and the cost of continually upgrading computer hardware and software.

Research Question 4 training and support issues for these NGO volunteers are directly connected with time and cost barriers. Lack of adequate ICT training and support for older adults is a deterrent to community volunteer service recruitment that would spread the responsibilities more equitably. As many of these NGOs with national and international parent bodies use top down and peer online communication there is a need for ICT literate executives. This results in a dichotomous situation where a large number of older adults who are at risk of social isolation are being served by a small number of equally old adults who are in danger of social overload as they juggle their family and community commitments. The later adopters in this group include one of the oldest members, who is a very recent graduate of the Computer Centre eLearn course. She is very aware of the information available at her fingertips, but lacks the

time to practice what she has been learning. Cost in setting-up and upgrading computer hardware and software and connecting to the Internet where this is not subsidised by NGOs is also reported to be an issue as volunteers use their new ICT knowledge and skills in fundraising and working to better the conditions of both their members and less advantaged in their communities. . A training and support implication for policy makers and funding bodies is that subsidised ‘on the job’ vocational education training—even commercial work experience—is just as important for older adult NGO volunteers, who are responsible in many cases for running small businesses as it is for older adult employees in the paid workforce (Osborne 2002).

Apparently reluctant ICT adopters have learned to use computers to serve their volunteer commitment purposes but have little need or time to embrace ICT further at this stage of their retirement. The situation where these third age learners’ time is devoted to community rather than to personal needs will continue in lockstep with the greying of the NGOs until new ways replace the old with the next generational age shift. Others, such as Louise, Bertha, Rita and Lorna are among those who report a occasional reliance on family and friends with all but ‘out of the ordinary’ things such as ISP connection and software installation.

The amount of human capital accrued through the volunteer effort of the members of the NGO focus group is typical of third age social capital contribution, which is the subject of Research Question 5. The social capital bonding, bridging and linking aspects are apparent as these NGO members bond within their own groups, boundary cross between groups and forge linkages between local, state and national government and non-government hierarchies. The narrative in the next section explores the motives and research topics of a group of third age learners who have committed some of their retirement years to a different ICT journey as they commence or return to formal study.

FOCUS ON FURTHER EDUCATION IN ‘RETIREMENT’

INTRODUCTION

Jarvis (2001, p.58) sees a different learning-in-retirement option as he identifies a growth area in higher education provision. He declares that “many older adults want qualifications for study” and reports that these later-life learners “seek opportunities for post secondary undergraduate to post graduate study”. A group of older adults who have commenced or returned to formal study reflect on their ICT learning journeys in

this focus group as they chat with researcher Jenni, who returned to formal study herself after a thirty year gap. Ted, Jenni, Fiona and Sheila are undertaking post-graduate research in ICT-related areas while Helga and Les are each using their computers as means to an end and find little need to access the Internet.

- 3D early ICT adopter Ted retired from a senior position with the education department and immediately returned to study. He is part way through an Education PhD researching the use of ICT in schools from the perspective of the teacher. Ted's motives are intrinsic as he draws on his extensive experience to add to the body of ICT education knowledge and acts as a mentor for a peer study group.
- 2D-wide ICT early adopter Jenni is a cliff-edge retiree (MacErlean, 2005) who sought further study options the morning after retiring from a forty year education and training career. She co-founded the Computer Centre with Louise and is completing a post-graduate research project studying other third age adults who are learning about and via computer technology. Her post-retirement research study has been challenging and rewarding—sentiments shared by the other members of the return-to-formal-study focus group:
- 2D-wide ICT early adopter Fiona has been studying concurrently with her employment as an adult educator and, since retirement, has been mentoring mature age students, who are themselves returning to formal study after periods of employment or parenting. She exhibits both the passion needed to sustain long term research and a deep compassion for her students.
- 2D-wide ICT later adopter Sheila came to post graduate study gradually as a family business venture failed and a change of direction saw her enrol as a mature age student in “every introductory computer and e-mail course available” before completing an undergraduate graphic arts degree with Honours. Returning to post graduate study after her family had left home, Sheila's just-achieved doctorate involves research into the contribution by local community print media to social capital.
- 2D-narrow ICT later adopter Helga has just completed a Fine Arts Degree, majoring in porcelain pottery. She also achieved inclusion on the Dean's List of Excellence, which she sees as a plus for older women. Helga is bemused that she could accomplish this as a quite mature age student whose first language is not English. Helga plans to use the practical skills gained during her study in conjunction with her ICT knowledge in the palliative care area.
- 2D-narrow later adopter Les has long been a self-proclaimed luddite, rejecting ICT as a waster of precious living time. This attitude has been modified somewhat following his enrolment at age 70 in an undergraduate Arts Degree. He has now successfully completed his second year psychology and philosophy units and has just received a ‘hand-me-up’ (Scott, 1999) computer from his son. While he cannot be classified as a techno-convert, he and his wife are learning together to use the computer to serve their growing needs.

This focus group, because of the self-directed, autonomous nature of the participants, takes the form of a round table discussion as it ranges widely on topics, which not only have relevance to the research questions asked in this study, but also raise new questions for further examination. As in the other focus groups containing early ICT adopters, the conversation starts with reminiscences of early computer experience:

Ted: My first direct involvement with computers was back in 1973 at which stage I was a member of a High School team. The computer was run on a main frame and the actual programming was done once a week by a matriculation college student.

Jenni: I had a sobering experience when I was offered a computer for our training program in the eighties. I took a technician with me to inspect the main-frame that took up most of a small room. He remarked that it would take eight men to lift it and it would probably kill four of them.

Ted: My next encounter was when each High School was able to borrow an original Apple machine. I have a background in maths and science so I read books and played around till I got it to work. There were virtually no courses available so it's been mainly trial and error, but I like someone to stand at my shoulder or sit beside me till I get some skills.

Fiona: I met computers in the eighties at work, but there was no training. You just looked over someone's shoulder or worked it out. I remember when we got our first home PC, it took days to try to set it up. I still remember the weird headache I got as I gritted my teeth and persevered.

Helga: I didn't know how to turn on a computer when I started Uni. They were all Macs then and I still use one for my art work. I use a computer to achieve some purpose, but I have a hate of technology per se though I do cruise the Net and of course Word Processing to type essays.

Ted: I've been connected with the Internet at home since it first became available. My online introduction actually came about when I conducted a seminar on leadership for senior staff at a high school. My fee was that after I took the seminar, they lined up a Grade 10 boy who was pretty familiar with technology who gave me a couple of hours on the Internet.

These self-directed third age learners, as envisaged by Knowles (1991) and Candy (2004), persist in acquiring ICT literacy despite gaps in available computer familiarisation and Internet access training as they take opportunistic advantage of informal serendipitous peer and younger generation support. This confirms the theory

that chronological age is not the limiting factor in ICT literacy acquisition, but that rather education and employment background plays an important part in maintaining the self-confidence to experiment with new and unfamiliar technologies to achieve goals.

Sheila: When I approached doing the first essay for art theory, fear set in though of a different nature. Practical application of art is a joy. Writing what you think about it in academic theoretical terms is another story.

Helga: I found the discipline of sitting at a computer and writing and referencing journal articles and literature review research is very different from the freedom of expression as you lose yourself in producing art pieces from your imagination.

Jenni asked undergraduate Les, the only member in the focus group without a continuous learning background, to share his reasons for commencing University study:

Les: I had a choice as a young man – stay at college and go on to University or go into the world of work to make a living, and then after marriage, support a wife and family and make a new life across the world from the UK where I was born. While I was still on the farm, I joined a seniors' group as a volunteer tutor, taking groups bushwalking in the Tasmanian wilderness I'd come to love and know well. When problems with insurance liability became such that it was no longer an option for us to support this activity, I looked for something to fill the gap.

Jenni: I remember Les, when you first came to the Computer Centre after you 'inherited' your computer from your son. The tutor asked you what you were interested in and when he showed you how to find a UK crop circle website, you seemed to be an instant convert to Internet surfing.

Les: I wouldn't go as far as to say that. I'm all thumbs on the keyboard and anyway, I can work faster than a machine. I had a list to write this morning and it took me three minutes to do it longhand, whereas the computer was still warming up!

Les and his wife Wanda, who has come with him to the focus group, are using computer technology in a complementary way. They have learned just enough basic skills to use the pre-loved computer as a tool with much telephone help and visits from their interstate-based son. Les is making a tentative start by two-finger typing his assignments and intermittent google-searching. Wanda, with increasing interest in, and

respect for, ICT is mastering e-mail and producing the monthly bulletin for their Probus (Professional and Business) Club.

Les: I'm training Wanda to type my assignments. The practice would be good for her. Seriously though, Wanda supports me at home, giving me time and space to study.

Jenni: Family support is such an important part of return-to-study for the mature-age learner. I could not have contemplated it without the support of my husband. He encourages—no, more than that—he urges me to keep going and leave the kitchen, the laundry and the garden to him.

Research Question 1 issues for the third age learners in this focus group, who have committed a large slice of their retirement years to study, include the importance of support. The support is not only from immediate family and friends, who forego much social interaction, but also from a student network perspective. The members of the group have both intrinsic and extrinsic reason for commencing or returning to full or part-time formal study. They are filling post-retirement voids, picking up where they left off many years before to earn to support families or fulfilling long-felt ambitions, giving back the fruits of their experience to their professions, or simply studying for mentally stimulating personal enrichment.

Wanda: I'm thinking—just thinking—of joining Les at Uni. next semester in a course I've found for mature aged people interested in teaching other adults. I think it's important to keep mentally alert as well as physically fit. I've had two hip replacements and I still enjoy going for short walks.

Fiona: You should enjoy the challenge. There is plenty of help available I encourage the mature age students in my support group to attend the courses in library data base searching and so on, but some are pretty reluctant to take advantage of this and bypass the Internet until they absolutely can't avoid it any longer. How about you Les? Do you use the Internet to research your assignment topics?

Les: No, not really—it's books for me. Eventually machines will take over everybody and nobody will have to think, or be able to.

Sheila: Maybe it's a matter of necessity. I found it so much easier to do my research online at home, especially during the winter, as I live a long way from the University. What tipped the scales for me though was the introduction of a subsidised Broad Band program that saved the endless dial up costs.

Les: Our son gave us his old computer. It's a bit slow and we're not connected to the Internet yet—but we're not in any hurry.

Sheila: It's a matter of getting through the magic gate. Once you see what's on the other side, I'll be surprised if you're not as fascinated as I was.

Jenni made an attempt to bring the conversation around to the way older adults acquired ICT literacy. Les, with his philosophy unit still fresh in his thinking commented that human beings are not logical processors:

Les: We process patterns rather than logic. Maybe as computers function logically, they should be taught logically to some people, whereas others see patterns—see the patterns and have the ability to apply them.

Helga: There's also a bit of luck in how we understand what a computer is and what it can do.

Sheila: The least of my concerns focused on the skills I needed to use the computer. My focus on the computer centred round a great wonder and or what the computer could achieve, how it could make thoughts so visually professional.

Ted: It's difficult to generalise about whether age and confidence are linked—or age, learning and gender for that matter. The oldest person in one of the schools in my study is the hottest ICT shot in the school. Her husband is a farmer and she used the Internet to keep the farm records until she became confident enough to branch out.

Jenni: I was reminded of the Johari window when I heard Donald Rumsfeld's unreferenced talk about knowing what we know and the 'ah ha' of not realising that we know what we know.

Ted: I wonder if Joe Luft and Harry Ingham would have thought their namesake 'window' would so fascinate and motivate so many people to interpret it for their own purposes for half a century.

Jenni: I've used the concept to explain learning paths to our older adult learners to help them plot the progress of their understanding.

Fiona: I use the window concept with my students too. But I know how I personally learn. I follow pathways. I know what I'm looking for.

Looking for some rich data from this erudite group, Jenni seized this chance to ask the group about their individual learning styles and preferences:

Ted: I'm a visual learner – My suspicion is that acquiring computer literacy is much more a matter of whether you're auditory or not. Left to right, top to bottom or random placement doesn't bother visual learners, but auditories find website navigating difficult.

Fiona: I'm visual—intuitive—I would rather watch and copy than have lots of written information. I'm a perfectionist. Set myself a very high standard. Not really good at listening to a lecture—far better at reading and trying to work it out for myself. Is that visual

Helga: My family came to Australia from Russia as refugees when I was six. I couldn't speak English. My mother taught me with the aid of Columbines. The answers were right or wrong—if right, I got the sweet. I have lots of stored information, such as the date Columbus discovered America—October 10th 1492!

Sheila: How did I learn to use a computer? How do you go from fear to freedom? Fraught with anxiety about a recently lost business, I found stress does not help learning, so it really was a slow start and I needed to go over and over very simple things.

Les: I find that I use different learning styles in different situations. Observation is critical in bushwalking—you have to keep an eye on the weather, the track markers, the individual pace and comfort of the members of group you're leading and, of course, the time. I expect that this would be useful in navigating your way around the Internet.

Fiona: Observation is also essential when you're encouraging a group of mature age students to explore the Internet. I would think all the things Les mentions about bush navigating would be critical in leading or accompanying older adults on the Super Highway.

Sheila: I make mind maps of the texts I read and I find this helps to fix the relationships between the ideas in my mind, so I guess that's really visual too.

Research Question 2 calls for responses about how older adults learn. The answers given by the participants in this focus group to questions about their learning styles and preferences parallel those given by the rest of this study sample. The immediate response is 'visual' and as in the other groups, this is qualified upon reflection to include audio, kinaesthetic and empirical preferences. The early ICT adopters in this group are largely self-taught and are now self-directed in respect to new technology, relying on optional workshops and seminars to glean enough ICT knowledge to use computers for their study and conference presentation purposes. E-mail does not feature in discussions in this group except when referring to virtual communication with colleagues, as it is an integral part of daily life, one member of the group advising,

“never open your e-mails before midday”. Online searching is a facility widely used by the early ICT adopter post-graduates, but not yet fully exploited or appreciated by the later ICT adopter undergraduates, who show a reticence to go online.

The need for initial and ongoing support is equally important for older later ICT adopter adults. This support may come from online discussion groups and e-mail lists that augment face-to-face study groups and conference contacts. Mature age students who use their own computers at home to practice on need people they can call on when they need technical help soon overcome their ICT anxiety and gain confidence. The importance of actual and virtual networks and mentors to this group is reported to counteract the loneliness of the distance learner or the off campus mature age student.

The exchanges at this and the other focus groups in this study bear out the value of peer interest networks at all stages of the lifelong learning journeys. Les, for example, brought up a topic that he said he felt was a concern with the almost obscene amount of information being added to the Internet daily. He explained how he had looked up a topic and found over a million entries in less than a second. Les said his life was too short to go through even a fraction of those, even by narrowing the search. The conversation turned to plagiarism and the post-graduate students acknowledged that as more and more literature in a chosen field is reviewed, it becomes more difficult to refute accusations.

Ted: The accepted practice of standing on the shoulders of giants or trawling past writing to inform present situations, increasingly nullifies ‘original’ thoughts that have emanated from personal experience, observation and reflection.

Fiona: The Internet is a wonderful source of information, but it also means you have to check your every thought in case someone else has had the same thought and put it in print.

Jenni: I’ve got a quote here from a couple of researchers to reinforce my argument. Phillips and Pugh wrote in 2000 that it’s no accident that researchers who are unknown to each other can make similar discoveries at the same time.

Ted: Well, the word ‘nylon’, for example, is a combination of the names of the cities where the invention occurred simultaneously—New York and London.

Les: I'm a firm believer in synchronicity. So often if I concentrate on what I'm seeking an answer for, there'll be something about it in the press or on the radio or I'll open up a forgotten book and there it is.

Jenni: Or is it parallel evolutionism like the building of the stepped pyramids in Egypt and Central America—coincidence, or just an obvious outcome of learned experience?

Sheila: Is it perhaps part of Jung's collective unconscious do you think?

Ted: We are grossly undervaluing experience. School type knowledge is reproduceable, whereas life experience remains available for further learning. We can retain it and then have an 'ah-ha' experience. You can't go 'ah-ha' about something you know nothing about so for me it's a piece of knowledge that matches my experience.

Sheila: Perhaps it was at the point of entry into this new field of computing that the 'ah ha' experience really occurred for me. My journey with the computer continued into digital imaging in print media and its programs. The computer is adaptable to so many forms of learning and art imaging.

Jenni: Without a background in German, for ages I internalised Goethe as 'go-eth' as I read and my ah-ha, or rather uh-oh moment came when I heard a talk on the radio about 'Gerta'. The penny suddenly dropped to my chagrin and I hoped I hadn't had reason to mention him out loud.

Ted: That's exactly it. There was context. Experience made sense of language and that this was a significant person. I can't remember the source but I have read that little kids know things they've never learned and I think it's the same with people who learn to use computers. It's possible to know more than we can learn.

Fiona: I wonder how much that intuitive facility is carried into adulthood and into old age? There's a great deal of literature on women's ways of knowing, but I've not seen much written about a male equivalent.

Jenni: In my reading about older adult learning, I've been fascinated about right brain/left brain lateralisation, which might explain this. It seems that the male brain is more compartmentalised than the female brain and this makes it easier for hemispherical crossover in women.

Ted returned to the topic of mature age ICT uptake as he spoke of his research with primary school teachers, many of whom are pre-third age baby boomers. He recounted how he had found that quite a few of the women teachers, were resisting online activities:

Ted: It's a matter of having a reason and also having a support network. The teachers that are doing well as far as using IT in the classroom are those who have a personal network of supportive colleagues who share resources and are available to help solve problems.

Fiona: In my experience, support is a critical factor with all students, but particularly the older mature age students and younger single-parents, many of whom are distance learners.

Ted: I believe one of the major success factors is for all to have their own computers and to use email extensively. Those who don't, struggle.

Jenni: I can relate to that as a third age off-campus student, which I found to be a daunting, lonely experience until I discovered a virtual national network of second and third age researchers, ICT learning providers, NGO and government policy developers.

Les: I can understand there could be a loneliness, if you were not attending lectures and tutorials and meeting other students. There's also a loneliness having to defend becoming a student again. Your friends keep asking you why you're putting yourself through all that torture when you could be playing golf or bowls.

Fiona: There needs to be peer support to keep up the impetus over the long post-graduate study years. The passion for your research is still there but sometimes the technology gets the better of you if your energy and concentration flags.

Sheila: This is so true of older students who work at home and don't have a tech down the corridor or children or grandchildren nearby to allay the panic when the data mysteriously disappears or heart-stopping error messages appear.

INCENTIVES AND BARRIERS TO ICT LEARNING

Research question 3 is concerned with aspects that foster or inhibit the uptake of ICT in later life. The barriers for both the early and later ICT adopters who are new to the technical complexities of mastering and presentation of long documents are overcome with appropriate training and support. Seminars and workshops to familiarise students with data base searching and retrieval skills are reported to be invaluable. The later adopters in this focus group are at the beginning of their ICT journeys. Helga uses ICT under duress, but sees its value in her planned post graduate volunteer activities while Les is just beginning to realise that he will need to tackle the steep learning curve very soon as he progresses into his second undergraduate year.

Barriers to ICT use are not reported to be an issue to mature age undergraduate and post-graduate students who are near enough to the University or College to take advantage of the excellent facilities available. The barriers mentioned by off-campus third age learners are alone-ness and technical problems. Encouragement from immediate family is a powerful incentive to succeed as students commencing or returning to formal study at any level necessarily spend much time apart from family and friends. A comment often made, particularly where only one member of the partnership is a student, is a consciousness and appreciation of the generosity of spirit of a spouse who patiently watches from the sidelines and waits for the end of the post-retirement study journey.

MATURE AGE STUDENTS AND ICT

Members' replies to Research Question 4 enquiries about appropriate training and support indicate that there are ample opportunities available to mature age students who enrol in university undergraduate or post-graduate study. Focus group participants report that frequent varied and comprehensive workshops and seminars are organised by both faculty and student associations. They attend lectures by visiting academics as well as regular faculty in house conferences and take advantage of subsidies to attend national and international conference attendance to present group or individual papers.

A comment by Ted surprised the group as he said he had found in his research that all young people are not techno-kids as is commonly supposed. He declared that although many young people know more about computers than any other age group and are not fazed by them, some just don't use computers by choice and don't even like them. This indifference noted by Ted perhaps confirms the 'taken for granted' digital native status of children as propounded by Prensky (2001). Ted reports that:

The kids at school today have always had IT. If you ask them what's good about IT they just stare. You might as well ask 'what's good about Weet Bix'?

Ted admitted that children of course, do use computers at school and at home and that the younger Grade 3 children often help older neighbours and relatives after school. He added that interestingly, if you ask Grade 5 or 6 kids about home computer use, they often say Grandma or Grandpop or a neighbour helps them. The conversation turned to online learning and the resistance some teachers had to using this mode.

It was generally agreed by the group that until recently with the influx of computers into every area of school life, the younger middle-aged and baby boomer teachers who had missed out on computers while at school were just as reticent and anxious about new technology as the older, now retired later ICT adopters. Fiona remarked that she thought she knew why this was:

The teachers I know are passionate about the hands on, face-to-face imparting of knowledge, whereas online teaching takes away the personal contact.

While there were murmurs of agreement, this was obviously a topic of interest to the group and it was tabled for discussion after the tea break. Another item on the agenda was Research Question 5—the social capital implications for this group.

SOCIAL CAPITAL ISSUES

As with the down-playing of e-mail use and online research, which is part of the daily routine of the early ICT adopters in the further education focus group, there is little emphasis on personal, even incidental volunteer involvement, as contributing to social capital. This situation is partly due to a need to carefully budget use of time to balance family and undergraduate or post-graduate study commitment. Members of the group were keen to discuss human and social capital as a topic, as social capital featured in several of the research projects.

Analysis of the research study interview transcripts reveals that the human capital contribution of these third age undergraduate and post-graduate learners has the potential to add significantly to the community social capital pool and knowledge base. The members of this focus group are not only indulging their personal passions but are also motivated by the opportunity to give back to their professions or organisations. The rest-of-life plans include transferring their enthusiasm and energy, their skills and knowledge to ongoing research projects and/or community volunteer activities. The Computer Centre member whose story is told in the next section is also contributing to community social capital as she uses her newly updated ICT skills in accepting a new role change challenge in retirement, which requires a return to formal training.

PAM'S STORY RETIREMENT INTO, NOT OUT OF, THE COMMUNITY

Jarvis (2001) writes that not all older adults disengage from society and seek a world with less risk and challenge and more security. Activity and continuity theories discussed in Chapter 3 closely fit Pam's attitude to ICT. A retired special education teacher, Pam is in her early 60s and is upgrading her computing and Internet skills after a long break. This previously lapsed 2D-wide early computer adopter has been aware of the potential of ICT but has only lately found the time to take the first steps to learn what has developed while she has been involved in family concerns. Pam also supports her husband who has served as a city councillor since his retirement from teaching. The arrival in Tasmania of Sudanese refugees provided the motivation trigger that awakened the internal personal need to learn new skills that Redding, Eisenman and Rugolo (1998) suggest occur with ageing. Pam is now applying her new ICT knowledge and skills to contribute to community social capital through volunteer adult migrant language tutoring. Pam first talks about her early experience with first generation computers:

I used computers in my work with children with disabilities. We had Macs. It opened another world – it certainly had a profound effect on me. I suppose it's called the ameliorating effects of disability. I've been hugely interested in technology for the past twenty years of my life. Mind you, I'm not all that competent now.

There's lots of well-developed software for children with special needs. The computer, though, doesn't give you the same tactile experience of feeling the difference in the size of objects and so on. The hand and the brain co-ordination is so important.

Pam explains that when she is interested in something, she is motivated enough to "give it a go". In Chapter 2, Carré (2000) was quoted as claiming that motivation is an indispensable ingredient of learning. Pam exemplifies this and also exhibits the locus of control that Manheimer, Snodgrass & Moscow-McKenzie (1997) feel is a necessary attitudinal adjunct to new technology learning by older adults. Pam explains the how and why of her ICT learning and identifies her learning style in relation to Research Question 2:

If I can't do something and I'm really stuck, I'll ask someone. I ask questions till I find out. I ring my ISP to eliminate possible sources of the problem, or I ring a friend. But since work, ten years have passed.

I'm now interested in re-gaining past skills. I want to be part of today's world, which is very much driven by technology.

I want to be able to be competent to use email and the Internet for everyday living. I'd like to be part of the conversation of the community that revolves around some understanding of technology in your home life, in your work or your leisure. Even watching the news, you have to know something about it.

My learning style is strongly visual, however, as I'm getting older, I feel I may be getting more audio. I know I'm more interested in listening to the radio these days. I wonder if, by this age, we use a whole lot of modalities? I know that I can look at something on the screen and can miss all the finer points. Then I think, I'll try this or the other.

Pam in reflecting about ICT literacy acquisition barriers and incentives, talked more about the barriers faced by others than by herself. She explained that she has long been aware of a disability divide as she looks back twenty years to her teaching days in a special school for children with disabilities. Her reflections on using her new ICT skills and knowledge to help bridge the digital and language divide experienced by refugees are reported later in this section:

It must have been as early as '86 that I had a student using a computer. There were not too many people who were using an old Radio Shack thing like the one that his father and other interested people had put together. For the very first time in his life, with the use of a knee and an elbow, he was able to access some way of showing where he was in terms of language development and this led to spelling and reading and communication.

It was a huge interest to me and also through that technology, I could recognise the theory I'd learned as a teacher. When we take on new learning, it has to be assimilated with older understandings to make sense of it—that's scaffolding—and then we add our new learning and make sense of that. That's Piaget theory isn't it?

I think that using a computer keyboard is using a different part of the brain than writing. I now go straight to the screen. I used to write longhand and copy it onto the computer, but now it's brain-to-fingers on the keyboard. I type in what I want to know and bring it along to my computer group on a floppy disk.

I use a knowledge of computing in my volunteering in two ways. It lets me prepare study material and it keeps me up with technology. A little knowledge can help you point someone in the right direction. You don't want to be a 'behind the times' person.

If you're going to tutor anyone, you have to know your subject. I'm used to teaching people with disabilities—people who experience difficulties in learning. It could be the same for people who are refugees or migrants. Teaching English to refugees from Sudan is already a challenge—transferring teaching principles from removing physical barriers to removing language barriers. There's something wonderful about getting things up on the screen for them to see.

Asked about whether she had a preference for peer or mixed age groups, Pam opted for segregation, but added that she belongs to a number of mixed-age groups and is quite comfortable in either age-segregated or age-integrated learning situations:

I really like my peer age group. Maybe it's because there are so many items of common interest in a roomful of fifty-pluses. That's a lot of years, experience and skills. I don't know whether it's because you have a whole lot of similar experiences or because you all have differences. The group is predominantly older and there is a sense of sameness and understanding of life experience. Sharing brings you to a really comfortable relationship

I'm just getting brave enough to look up websites. I LOVE e-mail. I LOVE e-mailing. I LOVE the immediacy of it. When I first started, I was terror-stricken about it going to places it shouldn't.

The computer is something I love. I don't think of it as a tool. My husband sees it as a failure thing when things don't go right. He's a perfectionist. He hates to have a spelling error or a grammatical mistake, whereas I just rush in and get it all on the screen.

Pam is a self-directed lifelong learner who enjoys the social contact among peers provided by the Computer Centre. She accesses both the informal one-to-one trouble shooting sessions and the structure of the more formal structured TAFE e-Learn course reviewed in Chapter 4. This combination helped to build the confidence that comes with ICT literacy acquisition and provided an additional trigger to seek further training:

I feel that spark of interest again in this tuppence worth of training at Migrant Education Services. It's kindled my interest. I'm genuinely interested in returning to study. Yes, there's a little spark there. I'd like to find out about RPL [recognition of prior learning] or credit transfer. Perhaps I could do a graduate diploma? Or even a post-graduate degree.

I see myself as a very early learner, toddling along the Super Highway with perhaps a pull along child's toy, or maybe I'm just pedalling. As far as my confidence with having a go is concerned, I'm in cruise control. Now if I read a magazine, I see the Internet website. I

haven't looked at all the sites I've listed, but I know they're there waiting.

Once, I vaguely knew that you could look up www addresses, but it didn't come up front. It's now lifting itself out of the page for me to note. It's changed the way I read text in magazines. If we miss the news, I say to my husband, let's look at the paper on the Net. I'm becoming more attuned with the Web.

Pam is another of the participants in this research project who has reflected on the best and worst aspects of ICT and how it fits into the rest of her third age of active retirement and how it may impact on others in a less fortunate situation than her own:

I think the exciting thing is that technology is allowing us to be challenged at whatever age we're at. As I approach the upper limit of the generally accepted third age span, I don't expect to wake up on my next birthday, fold my arms and prepare to put on the garments of the dreaded fourth age of decline, decrepitude and decay I've been reading about.

I think one of the worst things about technology is that it has opened up another world for some, but closed it for others. Computing gives you the chance to do something by rote. You may not need to know the facts, but just how to get to them. The first time I got an error message, I realised after the initial shock that it is to encourage you to seek for the solution.

The application of the continuity theory (Havighurst, Neugarten & Tobin 1968; Atchley 1972) can be seen as Pam's training and experience gained in a working life teaching physically and intellectually disabled children is combined with her 'personal characteristics, values and behaviours' and transferred to teaching literacy to disadvantaged refugees. Pam is what King (1997) refers to as curious and capable and a searcher (Kilpatrick & Hazzlewood), as she learns by experimenting, exploring, researching and reflecting on her learning. She knows when to ask for help and turns to friends, tutors, support networks, books, computer-based and online Help. An avid e-mailer, Pam window shops for the training and support that matches the time she has to spare from her family, public and community commitments.

Pam also exhibits activity theory traits (Havighurst 1963) as she finds self-motivated ways to climb barriers or go around them and uses this experience to help others. Pam is an Apple Mac computer user and a potential setback occurred as the eLearn course Pam completed at the Computer Centre was orientated toward Windows PC computers,

necessitating the conversion of assignments to suit the MacIntosh platform. Further, because of the dominance of the IBM compatible PCs in her community work, Pam repeated the eLearn course becoming familiar with and proficient in both platforms.

Pam is comfortable in either peer or mixed age groupings, but prefers the social aspect of learning in her own age group. Social capital bonding and bridging can be observed as Pam moves between as well as within community groups, as she contributes the ICT skills learned at the Computer Centre to another learning situation. The gaining and sharing of the 'invisible benefits' of adult community education (Falk, Golding & Balatti 2000) by older adults such as Pam is also noted as they use their new ICT knowledge and skills in their multiple personal and community volunteer roles (Hong & Seltzer 1995; Reid & Hardy 1999; Warburton and Bartlett 2004).

As in the stories of other older adults, reminiscences of early contact with computers have an important place in her journey towards her wish to 'join the modern world' through acquiring ICT literacy. Pam's ICT journey is one of close correlation with activity and continuity theories of ageing as she actively seeks identification with the technological community rather than the role less which can occur in later life (Rosow 1976). Applying Roger's (1995) diffusion of innovation theory, Pam can be classified as an early, albeit lapsed ICT adopter, while Queenie, whose story is traced in the next section of this chapter, is quite different as her current ICT literacy status places her—by her choice—in the laggard category. Queenie, who like Pam, volunteers her knowledge, skills and time in the informal community learning sector, illustrates both the diversity of third age learners and the dichotomous nature of ICT literacy acquisition in later life as she is content to watch the Super Highway traffic from the side roads that cater adequately for her needs.

QUEENIES' STORY ONE WOMAN'S WAY OF KNOWING

Queenie is a lifelong learner who bought a new powerful computer, which she uses as a word processor to write letters. She is connected to the Internet on a two-hours-a-month basis, which is adequate for her modest e-mail communication with her widely scattered family. Queenie is a recent 'brain gain' arrival in Tasmania (Jackson 2005; Rose 2005), does not own a car, choosing to live within walking distance of the city in this regional area, she chose in retirement to live alone, after wandering the world for

many interesting and full years and surviving three husbands. Queenie was introduced to a number of NGOs and adult community learning places by members of the Computer Centre and chose to join a seniors' school, which is just around the corner from her home, and where she has quickly become an active member. She is restoring her early 1920s heritage home and as well as joining a variety of classes as a student, she volunteers her spare time to tutor other third age learners in creative writing and to give poetry readings of her own work. Queenie rejects the penetration of technology into her 'life, work, and social interaction' (Nasseh, 1998) as she chooses to avoid change:

You ask me about elderly people and modern technology. The changes that occur almost minute-by-minute as the technological juggernaut rolls ever onwards in the twenty first century are insidious and in many cases rejected by bewildered older adults, such as this one.

We start to learn the minute we're born and hopefully don't stop until we die. Much of our learning is a subtle process—we 'pick-up' and imitate, bits of information and ways of doing things. The ways in which we learn and practice our knowledge are influenced by our own personality and the culture in which we were born.

A large proportion of the world's senior citizens are feeling left behind because they don't know what their children know or how they're doing it. They—I—can feel alien in a world changed more quickly than many of us have been able to keep up with. We blame war and what we choose to call 'technology'.

Queenie has been unable to come to terms with having to keep pace with digital development (McKie, 2000) preferring to try to remain in a time capsule where cultural changes outlast individual life-spans (Whitehead 1929). Queenie is a gregarious third age learner who has a full social life as she gathers acquaintances from all sections of the community who attend her 'at home' open hospitality days:

If you talk to people in their 80s and 90s, many will say life was more comfortable 'back then'. There were no 'what ifs'. There has always been change, usually slow, but then suddenly a fast blip and the past 70-100 years has seen phenomenal advances in every facet of science—man landed on the moon and we got Teflon-coated saucepans and micro-wave ovens.

In earlier times, it was possible to take or leave new fangled gadgets until the novelty wore off and they became commonplace and

affordable. Today there is little or no choice, and worse, the non-use of new technology not only limits choices but often incurs penalties.

Queenie points out the difficulties for older adults with age-related sight and hearing impairment caused by the technology designed to make life easier:

There has always been what we today call “the generation gap”. Plato despaired of the youth of his time. In a sense that has reversed today with the young despairing of their elders and not experiencing that magic moment when they realise just how much their elders actually do know

I was asked to write about the elderly of today and technology. My answer is in having a belief in ourselves, the third generation, and our grandchildren, the first generation, we might be able to work towards a system—a way of living—that includes all levels of society, not forgetting that we all need each other.

Queenie’s reflection on older adults and technology neatly side-steps ICT per se, as it echoes the concept behind the International Year of the Older Person, a society for all ages (Annan 1998), which spawned much of the push for new technology access programs for older adults. The presence of the four pillars of learning—learning to know, learning to do, learning to be and learning to live together—as espoused by Delors (1996) are also evident in the transcripts of interviews with Queenie and in her writing. Her woman’s way of knowing, her ego-centric way of learning to do, her serene way of learning to be—alone and yet not dis-engaged from society—and her acknowledgement of the value of community involvement through volunteer service and the recognition of the importance of learning to live together by reaching out to others.

Out of step with modernity and out of the path of the technology Queenie sees as a steamroller, this reluctant new technology adopter has some of Arley Smith’s (2005) perfectly good reasons for not becoming ICT literate. Queenie may be classified as one of Rogers’ (1995) laggards as she expresses regret for the passing of what she sees as pre-technology courtesies, such as the acknowledgement of the young of the wisdom of the old. Queenie has not dis-engaged from society—just from technology, which she sees as a threat to her life, which is impacted by both continuity and activity theories. Queenie’s sudden decision to choose her retirement location by chance is akin to cliff-top retirement (MacErlean, 2005) and her re-building of a comfortable, satisfying community-based lifestyle shows the influence of role theory (Rosow, 1976).

I'm all for older people being able to use their faculties to the utmost. Some of us learn another language, take up painting, or write a book and we use modern technology to the extent that we need or understand it.

In this era I am relatively young at age 63. I am, however, given the 'courtesy' title of senior citizen, but improved health and longer lives are redefining the ways in which we consider age. I am very fortunate in that I can choose from a vast array of technologies, use the ones I want and understand and more or less ignore the rest.

I use Word and sometimes inadvertently lose something by accidentally hitting the wrong button and become very frustrated at not being able to retrieve it. However, that frustration is not great enough to push me to want to learn how to do it by myself.

Queenie makes a conscious choice to employ cafeteria eclecticism (Bright 1989), as she uses only as much technology as is required for a full, comfortable creative yet stress-free retirement away from the Super 'Hypeway'. A teacher rather than a student, Queenie learns by sharing her deeply reflective, alternative lifestyle knowledge and experience with other like-minded peers. Assistance for the necessary maintenance of the health of her computer is forthcoming from the many friends and acquaintances this gregarious lifelong learner has made since her relatively recent arrival to retire in Tasmania following a pin on the map decision.

The implications in Queenie's story relating to Research Question 1 third age ICT learning and ICT issues are clearly that in this diverse third age cohort, the older adults in this study find the level of computer end use and Internet access that matches their needs, wants, aspirations and changing external and internal circumstances at any time. Awareness of opportunities is significant in order for older adults such as Queenie to make choices and informed decisions about seeking training and support as they need it.

Queenie learns by keeping within her time and needs limitations and by calling on new friends, who are happy to help, when she needs ICT assistance. The barriers Queenie experiences are with the lack of transparency in the electronic components of the new computer technology as she explains that in times past, someone in the family could at least attempt to fix the sewing machine for example, when it broke down. Queenie has help when she is desperate from an eighteen year old who never tells her she should learn while he is "pressing buttons and lights are flashing on and off the screen" faster than she can read or recognise them for next time. Queenies's learning style is self

directed to the point where she realises she needs to seek assistance if the motivation is strong enough.

I learn by reading and researching any topic I'm interested in myself or need for my adult learning sessions. I learn by using all my senses by observing, listening and doing.

In relation to Research Question 5, Queenie, through her human capital contribution to her adopted regional learning community, has added substantially to social capital as she has bonded with both seniors' groups and peer-interest individuals. Queenie sums up her personal philosophy of ageing by stating the hope that for "whatever time we 'oldies' have left, perhaps we can be given the recognition for what we do know and be cheerfully helped along with what we don't".

ALF AND JAEI A CYBER-SENIOR PARTNERSHIP

This third age husband-and-wife learning partnership narrative captures the essence of this thesis in that links can be made with each chapter, each research question and each section in Chapter 4 and in this results chapter. Alf and Jael are early ICT adopters—third age learners who have been keenly involved in new technology as each aspect evolved. They use their skills, knowledge and time in retirement as community volunteers in church groups, NGOs and older adult educational settings. Their Internet use mirrors the Australian Department of Communications, Information Technology and the Arts (DCITA, 2000) case study of a husband and wife who use the Internet at home every day. In the case of Alf and Jael, this home use followed a cautious six-month window shopping, public access 'dry run' at the local library before connecting to the Internet for family communication, information gathering and interest-related research. Alf and Jael competently mix and match their ICT interaction within the four typologies—window shoppers, e-mailers, searchers and e-seniors—identified by Kilpatrick and Hazzlewood (2001).

Alf and Jael were interviewed together but they also provided separate journal reflections on their ICT learning journeys, which are integrated into this narrative. Positive words used to describe this couple's attitude to new technology include choice, enthusiastic, delighted, appreciative, absorbing, wondrous, satisfying, magic, and joyous. Negative comments made are about frustrations, inappropriate and unsatisfying

training, inept home support and lack of trust in online security. These spontaneous comments corroborate Burns' (1995) comments that where there is motivation and persistence, barriers to learning are overcome as self-directed learning is employed.

Jael describes her lifelong learning journey as one continuous thread in a life full of colour and marvel. She exhibits attributes of agelessness as she asserts that it does not matter how old you are to be a truth-seeker. Her enthusiasm can be gauged as she exclaims:

I love to learn I love to teach. Now I'm a nurse teaching the disadvantaged, a grey-haired Grandma with computer literacy and some competency. I have a computer of my own linked to the Internet and the time to do it all. What a life! Who said anything negative about retirement?

Jael recalls that an unfulfilled childhood with little parental encouragement to study was followed by a traumatised nursing career. This career was cut short by an unsatisfactory first marriage and long years raising a family:

When my children were still at High School, I went to the local college to learn about computing. I dropped out after a few weeks, as I didn't understand their maths jargon, although I'd topped my class in maths in my final year. I found out that my children's school had computer classes more at my level so I enrolled.

Ten years later with a computer in the house, I had a new skill to develop. It terrified me that I might damage it when I turned it on. We upgraded to a PC with a hard drive, though still using DOS and I wrote my early academic papers on it. My first grandchild was on the way when I commenced my Bachelor's degree.

The saga of disincentives changed as Jael's mind "began to rebel against atrophy". Encouragement and support found in a second marriage completed this positive change. She proudly reports, "pursuit of excellence in our family is a welcome choice, not a demand, requirement or pressure".

As a mature age student in 1990, Jael used her computer with the "old DOS Word Star program" for assignments, finishing her nursing degree in 1991. She recalls that the Internet didn't come for her till 1997. Jael now enjoys a well balanced post retirement program of informal learning and community volunteer involvement. She has recently joined the local equivalent of U3A, which she says sets her on a new learning curve.

There she is learning how to write short stories and to play Mah-Jongg and reports that “each new learning thing is a work in progress”.

Jael’s husband Alf has had a computer “for a long time”. Alf took early retirement due to illness and he uses the Internet to enrich his and his family’s lives and to keep in touch with friends and community contacts as well. He also supports Jael in her pursuits, as she does, his. Alf is excited as he has just received an e-mail and attached family photographs:

My sister, she’s eighty, she had one of those community computers. I don’t think she does much with it—writes a few letters, organises recipes and that sort of thing. My two nephews live in Europe and keep in contact with my sister, their mother, through us by e-mail. They drop into a Cyber-Café and as soon as they hit the Send button it’s here.

One nephew sent a picture of my sister’s first great grandchild to us on the Net as soon as it was born. My sister and her husband came to look at pictures and they were just gob-smacked. Well my brother-in-law, he was a bank manager but also an amateur photographer. He’s still involved in photography and he’s good at it. He saw this photo on the computer and he asked where it came from and when we asked him if he would like a copy of it, he exclaimed “it’s a miracle”. It’s something quite foreign to them.

E-mail has become Jael’s main Internet interest, as she fits into the gender specific role of family communicator found in the majority of older adults interviewed. She keeps in touch with children and grand-children, especially when they are overseas. Jael likes the instancy of communication, “we communicate so quickly”, and enjoys the go-between role between relatives wanting to catch up with each other. Her siblings in the UK have just gone online and she finds that “after years of silence, suddenly we have weekly contact”.

Alf and Jael have a very pragmatic approach to e-banking and e-commerce as they acknowledge the convenience of the services, but prudently put safety checks in place:

Jael: We regularly check our account balances on the Net. Being able to do banking business while still in my nightclothes is a plus—there’s something quirky about that!

Alf: We pay all our bills through the Net. We used to do it by phone. If we ever have to give our credit card numbers for any transaction,

we always use the one with the very low limit so they cannot touch anything.

Jael: Hence the external modem. While the switch is off, nothing can get into our computer. We prefer that for security. You never know who's watching—X-Files stuff!

Theories of ageing, which were described in Chapter 2 can be tested against this husband and wife partnership and generalised to the wider group. Although nominally stratified by inclusion in Laslett's (1989) third age, Alf and Jael are representatives of couples who share diverse ICT interests in retirement. There is no evidence of the negative connotation of homogeneity that Williamson (1995) notes can be drawn from the application of Cockerhams's (1991) stratification theory to third age adults. The largely discounted concept of social disengagement discussed by Adelman (1994), Williamson (1995) and Bors, Altpeter, Luken and Butler (2004) is not found to apply to Alf and Jael or to Karl and Freda, the husband and wife couple featured in the AMES focus group. There is much evidence found in the data gathered from these sample participants that their third age ICT journeys can be linked with the continuity theory and Tomstan's (2005) gerontranscendence theory, which is characterised by role change rationalisation (Rosow 1976) and increased life-stage development satisfaction. Alf and Jael are third age learners who have come to terms with the radical role change break that can occur at the time of retirement from paid employment or parenting responsibility. These older adults are self-directed lifelong learners who defy ageing stereotypes, exhibiting agelessness—positive ageing attributes identified by Throssell (2004). Intrinsic rather than extrinsic factors are the motivators for their coping with personal life stage development in a rapidly changing modern technological world. The mental stimulation stemming from their interaction with the Internet is obvious in Alf's and Jael's enthusiastic documenting, in both interviews and in journal entries, of their cyber learning journeys and wide range of interests.

Jael: My favourite websites apart from the Church and family history sites—which have been resources that couldn't be accessed otherwise—and the browsers and the business ones, include an Egyptian Theban Mapping Project, KV5. You can join a virtual archaeological dig and go down into the site and find out how they are going.

I can sit in my own home and go off to Egypt—Egyptology and all ancient history has always fascinated me. I was just stunned. I

wondered if there was something on the Tower of London and I found a virtual tour that even has a ghostly Beefeater who introduces it.

Alf: I use the computer for spreadsheets, and the Internet to read the newspapers and scientific journals to keep tabs on things. I was reading recently in the New Scientist, which is a reputable journal, about some new software that's been developed, that will allow, if you have it, access to other people's computers on the Net and use of their inactive time—it just blows your mind. So what's happened now is that you've got a massive computer made up of everybody who agreed.

Jael: I use the Net as an Encyclopaedia. Who'd have a set of Encyclopaedias when you can go to the Internet?

Alf: They're becoming irrelevant.

Learning styles and preferences were discussed briefly as it became obvious that these cyber seniors used mixed mode styles and quickly reverted to self-direction when training fell short of their expectations.

Alf: I did a TAFE course about Excel—a bit of a waste of time, a waste of time. You see I've learned Excel myself—and written my own accounting program. The course we did, in a lot of areas, was too elementary and in a lot of others, was just way out of my range. Things I have no concern about, or not terribly interested in—no that's not quite the right word—the things that I've learnt, are the things that I've needed to know.

Jael: I'll tell you what would have helped, for example, in that Excel course. If he'd had a couple of tutors available to him, they'd know the course, they'd know the product. In his case, he wanted to be able to design some macros, which was a bit advanced for the actual Excel course, but if he knew who to ask . . .

Alf: They didn't cover what I wanted to know, even though they said in the advertisement the course did cover macros and I thought "hey these guys are going to know all about this" so I took in a problem I had and they didn't know how to solve it.

The question of where to go for help with problems, which are more than basic or are of a specific nature, is asked by many of the 2D-wide ICT end users in this study. What is reported to be ideal is a context-sensitive solution to every problem, however complex, where and when it is needed. In the less than ideal technological world, there are no genies to call upon and available professional help is beyond the financial means of most older adults. The volunteer e-buddy programs are usually staffed by well-intentioned amateurs who are quickly out of their experience zone. This situation is not

any more satisfactory than formal courses that are not tailored to individual needs, or peer group computer clubs that have different tutors with different levels of expertise rostered each day.

Jael: I use the Help menu if I'm really desperate and as far as the Internet is concerned this is also a hands-on thing. I joined Senior Link and took my questions to the workshops, but I found I wasn't getting answers. The mainstream questions asked by the members were fairly basic.

Alf: I still think that if people really want to know they can learn. I think it's really individual motivation—either a need or a desire. I work it out for myself. It's the same with the Internet, if you follow your nose, you get there. I've looked up health sites and I've found the ones I've been to, have been referenced well and correlate with text books we've got here anyway. It's just updating what the text books say. Just look at the library around the corner in the lounge.

Jael: My entry into the magic of the Net is another parallel journey. I began to get the urge to explore the new dimension when I came back from Sydney in 1997. I chose to go to the public library to learn how to surf cyberspace before making the financial commitment to connect to the Internet. I booked in every month for an hour or two, making the most amazing discoveries. It didn't take too long for sufficient competency to develop to be able to go online at home. Sometime later Telstra offered us the 24-hour Broadband account and that proved to be a blessing. Now we can go on when we please, for as long as we please.

I went onto one site looking for information on near death experience – I did an assignment on NDE at University. If you really want some interesting stuff, the conspiracy theory can give you a whole realm of right wing, fringe wing—you name it . . . I've also searched out political documents, State Laws, crop circles and the local website of my childhood village in the UK.

Apart from keeping up with family and friends, there's been another learning curve in my older age. The government is funding a community group to support indigenous university students and help minimise dropout. Out of the blue I was approached to mentor one student and then two. This is a joy as I feel I have a lot to share.

Alf: You cut yourself off from the world if you're not connected to the Internet. Those people who don't have mobility can put themselves back into contact with the world—with all sorts of people. Nowadays with voicemail, you don't even have to type the thing.

Jael: If I might interrupt here - in 1999 I came across a brochure. It was a health promotion brochure. As a health practitioner I get these.

It was talking about alternatives to certain heart medications. I wanted to know more about it, so I went onto the Net—found a website that was brilliant. Having read many papers, professional papers, when I found this one, the evidence in the report was powerful, overwhelming and was worth following up.

If Jael finds something difficult to master such as talking in broken sentences in chat rooms, she says she puts it on the back burner till she has more free time for online exploration. She has the last word for this husband and wife third age learning team:

We didn't think we had a need to travel the Super Highway. We used to say, you know, there's no need, but it was a case of—um—you find as the door opens and you look out into the cyber-world, you find a lot more that you want to do. Retirement brings the freedom to step out into that journey whenever you want to.

SUMMARY

Alf and Jael have a positive, active and mentally stimulating relationship with ICT. They 'window shop' each new technology advance as it is introduced, cautious yet not rejecting any aspect before investigation. They use e-mail extensively to keep their extended family communication current and constant.

Alf and Jael are avid searchers, gaining maximum benefit from both surfing and purposeful searching for scientific information for study and personal enrichment. They seek training and support as needed, but fall back on their own resources when this falls short of their expectations.

The ICT knowledge and skills acquired is used to enrich others' lives as well as their own as they volunteer their services, adding their human capital to the community social capital store. They are e-seniors who are well within reach of the 3D-ICT end use adult literacy category. They have plateaued at their level of current need and time capacity without feeling any urgency to move to an arguably 'higher' level of e-technician expertise. Another e-senior couple, Karl and Freda tell a similar cyber-journey in the next narrative, which includes participants from non-English speaking backgrounds.

AMES FOCUS GROUP: A MULTICULTURAL PERSPECTIVE

The Australian Multicultural Education Service (AMES) focus group of ICT learners included both Computer Centre members who have been introduced in Chapter 4 and a group from non-English speaking backgrounds. Bridget, Enid, Henry, Wendy and husband and wife couple Freda and Karl were recruited from migrant and ethnic groups to join Computer Centre members in a survey of ICT learning experiences of older adults from both English and non-English speaking backgrounds. The biographical details of these un-aligned individuals appear in Table 5 at the beginning of Chapter 5.

Included here are thumbnail sketches of these individuals and extracts from informal discussions and interviews with them:

- Bridget is a 2D-wide early ICT adopter who has published a book about her experiences as a prisoner of war in Batavia during the second World War. She uses her Apple Mac computer as a tool in her writing and helps her husband in his volunteer role as treasurer for a retirees' group:

My husband became computer literate later than I did. He used to wake me up at 1 o'clock in the morning when he had a problem with say, spreadsheets. When I would find out what the problem was and suggest a solution, he would carry on till it was solved.

- Enid is a 2D-narrow, wheelchair-bound after a fall and has a day-carer who shares her enthusiasm for computing and the Internet and who transports her and her stroke-victim husband to a seniors' community club once a week for Bingo and other social activities.

I'm 72 now. I retired after working for 30 years in law courts with judges. I experienced the shock of not working and responded to the library online access centre publicity during Seniors Week. Didn't know a thing about e-mail. Now I keep in touch with ten grandchildren on the mainland—they are tickled pink that gran can write to them on their own terms.

- Henry is president of an International Educational Forum and uses his 2D-wide later adopter ICT skills in his considerable online correspondence with global counterparts. He is constantly amazed at the speed and ease of e-mail contact and derives great satisfaction from his virtual peer network interaction.
- Freda was a business principles teacher until her career was cut short by a debilitating heart condition. She has a pacemaker which restricts her mobility, however, she is very active in community matters, organising much of the group's business online from home, reserving her strength for the monthly meetings and the social functions and interstate travel connected with the

group. Freda communicates with the couple's two boys who are serving in the army overseas. She finds it easy and convenient to conduct all the family's financial dealings online.

- Karl is from a non-English speaking background who came to Australia on a two year working holiday at the age of nineteen more than fifty years ago, married and stayed. Karl has established himself in retirement as a talented designer of websites for community groups. Karl relates the couple's early experience with computers.
- Nola is a 2D-narrow later ICT adopter who is completing a migrant English language course in preparation for commencing a formal Community College course in horticulture and small business management. She comes from a non-English speaking background and uses e-mail to keep in touch with family members overseas and to search the Internet for information about plants and their history.
- Wendy is a 2D-wide later ICT adopter who has recently retired from a working life in welfare as a receptionist at a health centre. Wendy has been an after-hours volunteer telephone counsellor for several years and is a keen e-mailer. Her son and daughter and their families live and work interstate and since the death of her husband, Wendy has increased her community volunteer activities between visits to meet new grandchildren.

The husband and wife partnership of Karl and Freda is highlighted in this section as they lead the informal discussion. They fit into the e-senior typology identified by Kilpatrick and Hazzlewood (2001), which encompasses the other three typologies, window shoppers, e-mailers and searchers. Their adult literacy ICT coding (Hazzlewood 2004) is 3D, as this couple, despite fitting the later majority adopter (Rogers 1995) classification, have risen quickly through the 2D-narrow and 2D-wide categories by largely self-directed learning. Karl and Freda volunteer in tandem on the executive of a local chapter of a national seniors' organisation. They each have computers and use ICT for different but complementary purposes. Karl and Freda spend many enjoyable hours accessing Internet chat sessions and discussion boards. Freda is secretary and zone delegate to the National body and handles the correspondence while Karl acts as webmaster as well as being president of their group. They are always willing to share their expertise with others and are occasional guest speakers at the Computer Centre.

Karl: We got our new computer a few years ago and we started straight away thinking about a web page. We bought a CD called Webpages for Dummies. We went to TAFE and started at the top and worked our way down. The tutor kept saying "I presume you know this".

Freda: Well we didn't, but I did a U3A online course on writing and I've combined five family history stories into one volume and had it bound as well as e-mailing it to the family.

Enid: It was a thrilling time when we got out new-fangled computer. It opened up a whole new world for us. We were able to e-mail our friends frequently and were able to stay in regular contact with our children on their travels. We had great fun developing a web-page and learned to use a digital camera to photograph our gorgeous grandchildren and add the pictures to e-mails.

Henry is a keen family biographer, having completed an autobiography and journalling course at the local seniors' school. He also takes digital photographs and incorporates these in the travel journals that cover his annual winter caravan trips to remote outback Australia. Despite being a frequent user of e-mail, he is continually amazed at the speed and efficiency of the communication:

Henry: One of my ex-students is studying in Norway. He used to live in Laos and one night we got home late from a concert and on checking our e-mail I found an e-mail from him. He'd translated a technical paper into English and he asked me if I'd edit it for him. Anyway, it was about two o'clock by the time I finished it and e-mailed it back to him. There was a reply by breakfast time—that's the miracle of e-mail.

Karl: Well I can have an example here. My sister—the other day—on Saturday it was—I had sent them a card. I put my e-mail address and my website. They never had a clue what to do with it, so they took the card to an Internet Café and I got the first e-mail ever from them from Germany. I spoke to her at night and they had a look at my pages and they were absolutely overwhelmed—my sister and the boys. I get every time surprised when I go on the Internet. I'm always amazed—it's so fast.

Enid: Sometimes it's too fast for me. My fingers are quicker than my brain and I press the Send Button while I'm not thinking properly and it's gone. Then I have to send another e-mail to make sense of the message.

Freda: Seniors are getting mental stimulation from learning to use computers, because they have a problem-solving approach. We put things in our brains, whereas young people have it all put in front of them. We used to read Enid Blyton and Biggles and used our imaginations.

Wendy: I went to a number of adult education courses when I was learning to use a computer and later to learn about the Internet. They

were fairly expensive so it's just as well I was working at the time and could afford them.

Nola: I too had an experience with trying to learn computing, but it was a large class and I could not keep up. This was not a successful experience. Then I had help from a neighbour.

Henry: I have a neighbour who has a good grasp of computers, which comes in very handy when I come up with a problem I can't solve.

Freda: I sat down and taught myself how to do a spread sheet. The easy way out is to use a Table, but it's not an efficient way out. I have to do a lot of statistics for the State Conference and I knew it would take forever to do them in a table, so I set up an imaginary spread sheet to see how it would work. "Wow!" I thought, "this is what I want".

Bridget: My husband will wake me up at 1 o'clock in the morning if he cannot work out his financial spread sheet for his community group. He is a perfectionist and must have it looking good as well as being accurate.

Freda: I find it hard to see the small print on some of the websites so what I normally do with URLs, I put them on Note Pad, make the letters bigger and then copy and paste it.

Bridget: That is an idea I had not thought of. I write down new things as I learn them. It is useful for me and also for my husband who has not been using a computer as long as I have.

As in all the focus groups, the members of this focus group were happy to share their experiences and had stories of family or neighbour support. Offers of help and arrangement for further informal meetings resulted from some of the comments made at the focus group.

Karl: We use the Net for family calls—you don't need a phone. We just use the computer. Through iCam you can do it. Early in the morning I turn the computers on and I turn them off at 5 pm. We have a chat group in Leipzig. Every Monday we speak.

Henry: I have this software where you don't have to touch the screen or the mouse, but you can play table tennis, hitting the ball just by waving. I also have a screensaver with bubbles coming down and you can burst them just by poking in the air at them.

Enid: That sounds like fun and would help to pass the time. I find it hard to use the mouse for games. I would also like to use online banking, but I am worried about security.

Freda: It's horses for courses. I have a bad heart and don't get out much so I do all our banking on the Net and buy things too. We've never had any problems.

SUMMARY

Findings from this group revealed another similarity to the other groups studied. The early ICT adopters, whether from English or non-English speaking backgrounds, obviously had more experiences to share and more confidence in commenting than the novices in the groups. This group dynamic, however, did not limit the benefits resulting from the social interaction. The addition of the individuals from non-English speaking backgrounds added another dimension to this research study as it confirmed that some older adults whose second or subsequent language is English, lose much of the adopted language fluency as they age. This has implications for trainers who need to be aware that while English speaking older adult digital migrants (Prensky 2001; West 2003b) face barriers in learning a new (ICT) language, older adults who are perhaps reverting to a mother tongue other than English, have a double barrier to overcome. To assist these older 'double-digital migrants, to gain satisfaction from their ICT learning, introduction to news and other literature online in the older adults' own language is a useful first step.

CONCLUSION

This chapter combined results and discussion and fragments of ICT learning journeys of three focus groups, two individuals and a husband and wife partnership. The four ICT typologies referred to throughout this thesis, window shoppers, e-mailers, searchers and e-seniors are evidenced in the reports of the sample participants. The five themes that emerged from the earlier studies referred to earlier in the thesis are never far from the surface. These are the lifelong/lifewide thread (Faris 2002), the attitude of older adults towards technology, the gender and age differences in approach to ICT, training and support issues and the community social capital benefits accrued from third age volunteer effort. There is a mixture of early and later ICT adopters in this Chapter 5 sample, with innovators at one end of the ICT learning continuum and non-ICT adopters with valid reasons for being so, at the other end. Whereas the early and later adopters are contained within Rogers' (1995) bell curve, the broad adult lateracy categorisation of two and three dimensional ICT end use is envisioned as a wide-based truncated pyramid, which figure can accommodate the diverse range of skills,

knowledge and experience of the participants in this research study. The next chapter consists of an overall discussion of the findings from this study and identifies opportunities for further research.

CHAPTER SIX: DISCUSSION AND CONCLUSION

INTRODUCTION

Theories of ageing reviewed in Chapter 2 are discussed in the introduction to this chapter as they relate to the third age learners in this research study. The remainder of the chapter is set out in sections that correlate with the five research questions. The Chapter 1 background to the study and the literature reviewed in Chapter 2 are referred to throughout the chapter. Gaps in research that provide opportunities for further study are identified.

An awareness of the theories on ageing and how they may impact on the training and support provided for older adults have implications for all stakeholders, but particularly for course developers and trainers, who need to be aware of how these impact on older adult uptake and continuing basic or advanced ICT use. Ageism stereotypes based on chronological age have been shown to be inaccurate and may limit the ageless involvement of continuing to learn throughout life (Throssell 2004).

The role of the trainer or facilitator and the rhetoric of the policy maker impact on post-compulsory adult community education as the vital four-way link between theory, research, policy and practice needs to be recognised, re-established and sustained (Field 2000; Kilpatrick 2003; Findsen 2005). Policy makers and those developing and implementing programs for older adults need to be aware of the effect of changing roles in retirement on their ICT use and training and support needs. There is a special focus in this thesis on adult education theories and practices that have been transferred to the new learning needed by older adults to enable them to attain the ICT literacy level that matches their specific current circumstances. The participants in this study show that they can be regarded as ageing positively as they seek to take advantage of the ICT training and support opportunities offered and accepted. The outcomes reported in this study are limited to the sample group and to the local regional area studied.

The theories of ageing are seen to variously have more or less application to the adult men and women in this study. The continuity theory (Havighurst, Neugarten & Tobin 1968; Atchley 1972), which holds that as experience is gained, old ways of doing—in this study, learning—are updated to adapt and keep pace with new needs is particularly relevant to the whole sample surveyed. It was found that different long internalised learning behaviours, styles and preferences are carried into new ICT learning situations

as suggested by Withnall (2006). The self-directed 3D-ICT learners featured in Chapters 4 and 5, such as husband and wife e-Seniors Karl and Freda and Computer Centre early adopter tutors Diana, Ian, Brian and Murray are still at the forefront of new technology as they experiment with the latest technological developments. These innovators (Rogers 1995; Redding, Eisenman & Rugolo 1998) share the new knowledge and skills gained with others, as peer tutors, or in electronic or hard copy seniors' and mixed group newsletters. Karl, for example, is continually adding to his web-pages containing a wealth of innovative and informative features that are designed to be user, and therefore elder friendly. The Computer Centre tutors mentioned above are conducting sessions for tutors and members interested in new specialised techniques. Diana is showing groups how to transfer LPs to CDs and home movies to DVDs. Ian is learning about pod-casting and MP3 downloading to pass on the information at a tutor's meeting and Murray is setting up WebCams and following up information about Voiceover Internet Protocol (VoIP) to facilitate exchanges between grandparents and grandchildren and between distant seniors' computer clubs. At another level, Pam, a Computer Centre case study participant, whose working life was spent helping to educate young people with physical and intellectual disabilities, is using her ICT skills to help Sudanese refugees with their English language and computer studies.

Role theory (Rosow 1976) is found to be significant in this study of older adults whose ages range from the early 50s to the late 80s. Loss of networks (Warburton & Bartlett 2004) can occur at all ages, but particularly so in the lower and mid-age ranges, where early retirement or 'cliff edge' redundancy (MacErlean 2005) experienced by Jenni and Jael, or injury or disability, as in the case of Zoe and Reg, results in a role-less hiatus until new actual or virtual networks are formed. Jenni, the researcher in this study, realised the day after her retirement that life as she had known it for forty years, with its inter-linked actual networks, was over. She made immediate plans to return to formal study as an off-campus student and found the support she needed from actual and virtual peer interest networks supplemented by informal faculty seminars and workshops with fellow mature age and younger students. Jael sought an early retirement option to care for her husband Alf and has found a new network in her part-time volunteer mentor involvement with indigenous university students. Zoe, who was unable to continue her strenuous job following an accident, returned to formal study and

after completing a TAFE information technology diploma course has joined the volunteer tutor team to gain teaching experience.

The Computer Centre has also replaced lost workplace networks for Reg, who was invalided out of the workforce and, like Zoe turned to ICT as part of his rehabilitation program. In the upper-age ranges, this rolelessness occurs as intergenerational and peer carer responsibilities diminish or disappear. Role loss can occur not only at retirement but also due to life-stage changes that occur for the older adults themselves and for their immediate or extended families. These changes are often the result of the work-related relocation of children and therefore grandchildren, as in the case of Computer Centre members Ada, David and Hilda or they may follow the death of a dominant or dependent spouse or relative. Multi-role community service, for example, has helped to fill a void left when busy spouse-dependent public social lives ceased for NGO focus group members Lorna and Louise. The move from a too large family home to a more modest house in another town or state—an example is case study participant Queenie—or to a retirement village or into residential care is another example of loss of familiar networks. Hilda is moving into a retirement unit as her husband is no longer able to cope with repairs and maintenance of their house and garden and she has a medical condition which makes her increasingly less mobile. This move provides Hilda with entrée into a range of social and volunteer ICT activities without the need to travel off the property. The large residential care complex is not one of the ones where Hilda currently volunteers so this will mean forming new network connections. Helping the older residents in care to learn to use computers to keep in touch with distant family members, provides Hilda with much satisfaction. The down-sizing move also bypasses a potential barrier to her continuing ICT involvement with older adults who move to and fro across the boundary between the third and fourth ages (Withnall 2006).

The importance of these role-linked situations is qualified by individual internal and external lifespan variables. When Kath was widowed, she accepted a Computer Centre management role in addition to her tutoring, which she had not had time to accept before, as after her husband's retirement, they travelled extensively each winter exploring outback Australia as 'grey nomads'. Kath has found solace in her responsible position, has gained confidence and has continued to learn more complex aspects of ICT as well as the skills required to serve on the management team. A recent Fine Arts

graduate, Helga, a member of the FE focus group, has taken on a new role combining art and ICT. She has already started to develop a new network as she completes the training course which is a pre-requisite for volunteer service. She is helping older palliative care patients to use computers to communicate with their families and make digital albums of photographs in their possession and also those received by e-mail. The invisible outcomes from learning referred to by Bingman (2000) and Falk, Golding and Balatti (2000) have resulted in Helga using both her artistic talents and her newly acquired ICT skills in community service.

Age stratification theory (Cockerham 1991), which is so often used by policy makers as a funding cut-off benchmark to categorise older, and therefore somehow less worthy learners, is the theory least able to be applied to the sample in this study. This finding is consistent with those in the earlier study referred to in this thesis (Kilpatrick & Hazzlewood 2001), and with those of a number of researchers (King 1997; Williamson, Bow & Wale 1997; Swindell & Vasella 1999; Foskey 2000; Bosler 2002; West 2003a; Barnett & Adkins 2004; Throssell 2004).

Chronological age has not been shown in much research literature to be a significant factor in ICT literacy acquisition (Scott 1999; Ankers and Essom 2000; Foskey 2001, 2002; Candy 2004) or in this research study sample. Nor has an analysis of the data gathered been able to justify the stratification of these post-work (Withnall 2006) men and women into the age-linked corrals divided by bureaucratically convenient rigid age barriers. Laslett (1989) overrides this rigidity by delineating the third age by life-stage circumstances rather than by years lived. He is joined by advocates of agelessness such as Alvarez (1998), who declares that ageing is about life and not just a statistical continuation, and Throssell (2004), who links lifelong learning, agelessness and social well-being in an age-neutral paradigm. The concepts propounded by these second and third age writers are the antithesis of chronological age markers and more nearly parallel the attributes of the third age learners in this study than the chronological ageism stereotypes so often appended to older adults. The capacity to continue to learn into 'old old' age (Neugarten 1973) in the current age of connectivity and to be motivated to become ICT literate is a very individual-centric attribute, which is more accentuated in the third age than in any other. Papalia and Olds (1991) sum up the consensus view of ageing by researchers—and also by the participants in this study—

when they state that chronological years are a less satisfactory index of ageing than the way a person feels and acts.

Age does not appear to indicate whether a third age learner will be an early or later ICT adopter, an initiator or a laggard. Other personal and social circumstances, such as where attitude to new technology is situated on a positive/negative continuum, have been shown to have a more significant effect on the timing of the uptake of new technology. Louise, a woman in her late 80s, who not only is a passionate advocate of positive ageing but also exemplifies it, completed the e-Learn course and moved on to apply her new learning in her multiple community volunteer roles. Tina, who is nearly thirty years Louise's junior, is struggling to find the motivation to finish the coursework. In between, there are tortoises such as the Computer Centre's Von and Madge and hares like Hilda and Yvette, their progress not connected with their chronological age, but with various combinations of the many external and internal variables mentioned in this thesis. Cognitive ability, education and employment background also impact in varying degrees on the ICT journeys of older adults, as do physical agility, awareness of opportunities, and training and support networks. The hypothesis that a focus on age could limit involvement in learning (Throssell 2004) is supported, as the participants in this study ignore birthdays, exhibiting the attributes of agelessness as they accept challenges and fill multiple roles.

The concept of multiple roles in later life which is linked by Adelman (1994) to activity theory (Havighurst 1963) is found to be particularly applicable to the third age learning cohort in this study. These new roles in retirement have mutual social capital value for both giver and recipient as acknowledged by Warburton and Bartlett (2004) and are found in this study to be directly connected with both ICT learning incentives and barriers. The incentives derive from the variety of community volunteer activities increasingly requiring ICT literacy that are available following retirement from the second age where employment or parenting dictate the daily regimen. The barriers stem from the imbalance that occurs when there are too many calls on time in retirement as social pressures on younger generations impact on the third age learners, resulting in the opposite of social isolation—social overload. Third age and younger novice ICT learners need time to absorb and to practice new skills, time to access and apply the knowledge available on the Internet and time to enjoy the many benefits

accruing from the exploration of cyber-space. The third age ICT learners in this research study, such as the tutors and assistants in the Computer Centre and the NGO focus group executive members are typical of the wider community as they fill multiple retirement and/or sandwich generation roles (Abaya 1992) as parents, grandparents, children, partners, neighbours, students, mentors and caregivers (Adelmann 1994) and Warburton and Bartlett (2004) who add community volunteering to the list.

A proportion of time in retirement is spent in interstate and overseas travel by some of the participants in the sample with both trainers and learners who have relative and friends in other places and can afford to, move north to warmer climates leaving volunteer vacancies to be filled by new recruits and those who do not winter away. Recreational activities such as golf, swimming, tennis and exercise classes for older adults are also fitted into the busy lives of many of the third age learners in this study as reported by Tina, Irene and Bertha, for example, who are among the many older adults characterised more by active engagement than passive disengagement. Evidence of this productive use of scarce 'retirement' time is provided in the results recorded in Chapters 4 and 5.

The predominance of fitness and well-being in this sample of older men and women who lead full and interesting lives is due to the purposive selection criteria (Burns 2000; Williamson, Burstein & McKemmish 2002) which targeted those who are actively engaged in ICT training and support in their retirement years. It follows that disengagement theory (Cumming & Henry 1961) is not seen to apply to the third age learners and trainers who have volunteered to be participants in this study. This reinforces the rejection of that theory as a negative ageism stereotype by activity and continuity theorists, as the participants in this sample are seeking to engage with society rather than withdrawing from it. The usefulness of older theories of ageing such as the disengagement and activity theory dichotomy, has recently been challenged by Tomstan (2005), who introduces a positive ageing theory, gerontranscendence, which was briefly outlined in Chapter 2.

Research Question 1: What are the issues relating to adult learning in the third age of active retirement in the technological age?

RESEARCH QUESTION 1 FINDINGS

1.1 Older adults want choice without penalty in times of change

A major issue for older adults in relation to new technology is whether or not to learn to use computers and whether or not to access the Internet where there is not a perceived need, a valid reason or a kindled interest.

1.2 New technology adult learning pathways should match needs, wants and interests

Learning in the third age ranges along criss-crossing continua as needs, interests, aspirations, motivations, obligations and challenges change according to different internal or external factors in different contexts.

1.3 Progress towards ICT literacy correlates with individual differences

Early and later older adult ICT adopters progress at different rates to their optimum interest and capacity levels as they master technical aspects of computer hardware, complex software and online applications.

The general and specific issues affecting the learning of new skills, particularly new ICT skills in later life, when there is not the necessity to learn to earn, are as varied as the third age learners themselves. There is not a universal motivation to embrace new technology for its own sake found in this sample group of older adults who are learning to cope with retirement in the technological age. Hazzlewood (2002) finds that older adults who join the travellers on the super highway, enter from different points with different destinations in mind—or with no particular goal or travel plan—and exit at different points for different fulfilled or unfulfilled reasons. There are also grey nomads on the super highway found to be window-shopping tourists who are potentially e-senior cyber travellers. The third age ICT learners in this study travel alone or in small or large groups, some guided for a short time and then left to continue alone, with or without maps, others, with companion/guides who stay with individuals and groups for as long as they are needed.

1.1 Older adults want choice without penalty in times of change

A major issue for older adults in relation to new technology is whether or not to learn to use computers and whether or not to access the Internet where there is not a perceived need, a valid reason or a kindled interest.

The hardest step for many older adults to take into the vaguely known and slightly mysterious jargon-ridden buffer zone, between those who are computer and Internet literate and those who are not, is the first step, as is reported by Yvette and Tina in Chapter 4. The participants in this study represent older adults who have overcome 'familial institution' accessibility barriers of cost and time (Withnall 2006) and taken that first step and are actively seeking to learn to use computers and to access the Internet for general or specific extrinsic and intrinsic reasons. This section looks at the aspects of computer technology that first attract and later maintain the interest of the later adopter ICT older adults studied in this research project. The typologies identified by Kilpatrick and Hazzlewood (2001) are never far from the stories of these learners in later life. Window shopping, for example, is something which happens consciously or unconsciously as various external need and internal individual readiness factors trigger the moves to actively seek training and support for the first and subsequent steps in cyber-space. E-mail is the trigger for most later ICT adopters to overcome any apprehension they may have about their ability to join their relatives and friends on the super highway (Swindell & Vasella 1999; Brown 2000; Foskey 2000; Hazzlewood & Kilpatrick 2001; Kilpatrick & Hazzlewood 2001; Shepherd 2003). Supported independent random or purposeful searching for information is the next motivating factor in learning to access the Internet. The ease and speed of obtaining information from the Internet as searching skills are gained and refined, soon becomes for many, complementary to print and electronic media information gathering. Window shopping in its generally accepted sense is not confined to the later adopters or to any of the adult lateracy classifications as both early and later 2D-narrow, 2D-wide and 3D ICT adopters search for travel and accommodation details and compare real estate and large purchase prices. A small proportion of these window shoppers, particularly the e-seniors in this sample such as Rita, Karl and Freda, Jael and Alf complete their searches by purchasing online. Others like Yvette and Pam use the information gained in Internet searches to buy locally, while Enid, Patrick, Merle and Kath reject online shopping for security concerns or the non-possession of credit cards.

The first remark of novice ICT learners when they seek assistance is often that they have just been given, or bought, a computer and they "don't even know how to turn it on". The next comment, usually that they want to learn how to send e-mails to a son, a daughter, a grandchild or a friend, is consistent with the findings of Hazzlewood and

Kilpatrick (2001) and Swindell (2002) that e-mail is the Internet facility most used by the majority of both experienced and inexperienced sample participants. The initial Internet contact by most of the later ICT adopters in this study is the acquiring of a free e-mail address at a public access point such as a library, an online access centre, or a computer class or club. E-mail is used by practically all the participants in this study as is evidenced by the many references made by participants in Chapters 4 and 5. These findings confirm the ubiquitous nature of e-mail (DCITA 2000; NTIA 2000; Scott 2001; ABS 2005) and its significance in countering the social isolation of older adults. Although e-mail is seen as an impersonal means of communication, with few exceptions, the comments made leave no doubt about the acceptance of this speedy and inexpensive service. Parents like Karl and Freda, David, Kath and Ada keep in touch with children in other states and overseas. Photographs are exchanged and shared with other family members as Alf reports, and newsletters are sent and received by the members of the Computer Centre and the NGO focus group. Pam and Rita make travel and accommodation bookings and some of the more advanced users join in chat sessions, post messages on discussion boards and use e-mail in online learning.

The third age learners in this study have taken various combinations of “small steps and giant leaps” (Taylor, Rose & Wiyono 2004) towards becoming ICT literate, with a fine line dividing non-adopters and reluctant adopters, who use computers and may or may not have home Internet connection. Merle and Patrick are two NGO focus group members who explain in Chapter 5 that they use computers for personal or community service purposes, but they do not yet see any pressing reason to extend their minimal ICT interaction at this stage of their lives. Merle’s family lives close to her and Patrick’s wife is the online communicator in their family.

Analysis of data from interview transcripts reveals personal context-relevant, valid or readiness reasons for holding back or for remaining in the 2D-narrow ICT categories which suit the current needs of many of the participants in this study. Computer Centre members Yvette and Tina have moved at different rates from being reluctant ICT adopters to enthusiastic and hesitant e-mailers respectively, while further education focus group member Helga is using the technology she claims to dislike in her post-graduate community service e-mail program. Les, a self-confirmed luddite and undergraduate student is beginning to realise his need to adopt a more positive attitude

toward ICT in general, as part of his study regimen, and e-mail in particular as his wife Wanda is about to travel overseas to visit an ill family member. For Queenie, a non-adopter of much of the ICT she is capable of embracing and an excellent example of a harmony seeker (Jarvis 1994), technology occupies a take-it-or-leave-it place in her busy life as she limits her ICT use to spasmodic e-mailing and continues to fill her home with books. A perspective relating to non-adopters of ICT is given by NGO focus group members Bertha, Lorna, Louise and Rita who decry the failure by many older adults to bridge what they see as a digital gap—from zero or even basic computer use to e-mail communication. These NGO presidents and secretaries explain that this lack makes distribution of minutes and newsletters and executive communication other than from higher in the organisation both expensive and time consuming.

Reasons given for not accessing banking and shopping online include lack of disposable income, the perception of poor security, the preference for possessing hard copy evidence of income and savings in the shape of a pass book, the need for social contact with over-the-counter others and a general rejection of the unfamiliar. Kath's explains that her income is limited and carefully allocated so she therefore needs to "keep a close eye on finances" and likes to see her savings balance in black and white. This apprehension by some older adults extends to other technology interactions such as telephone bill paying and ATM transactions, however this avoidance may be as much a lack of literacy and numeracy skills (Falk & Guenther 2002; Scott 2002)—a way of disguising their lack of understanding and skill in using it—as the fear of mugging that Queenie expresses or the mistrust of the unseen nominated by Patrick, who with Merle, also prefers over-the-counter banking contact. Patrick's reasons are actually more ones of convenience as, with the other NGO volunteers mentioned above, he reports that not enough of the general members in his clubs are online and able to make online subscription payments, while Merle admits she enjoys the walk to the bank branch and a chat with a "real live person". The assertive non-adoption of ICT reported by the above sample participants adds weight to a recommendation made in the Research Question findings 1.3 section for a non-penalty transition period between the old face-to-face and the new electronic banking era.

There was a wide range of responses to questions about e-banking and e-shopping. The majority of those interviewed reported that if they used online banking facilities at all, it

was only to check balances, particularly when travelling interstate or overseas. However, those older adults who have a need to use e-commerce through a lack of mobility such as Barbara and Enid, who have overcome their aversion or apprehension like Yvette and Hilda, who have partner or family support and/or who are in a comfortable financial position, as Karl and Freda are, while initially cautious, gain confidence as their ICT competence and trust grows. Barbara, who is recuperating after a series of operations and is home bound, completes online transactions with the help of her neighbour, Laurie. Alf and Jael, whose story is told in Chapter 5, are comfortable using e-banking, but prudently put safety checks in place to minimise the possibility of fraud. There is, as in all other new technology adoption, a diverse range of e-commerce interaction reported, ranging from those who have a complete lack of interest, those who window shop for a comparison of prices, to the other end of the scale where people like AMES case study group member Freda and NGO focus group member Rita have no hesitation in making confident regular complex 'Windows' shopping transactions.

There is a strong indication that older adults prefer to choose the timing, the rate and the extent of their uptake of new technology. They, like Queenie, resent the lack of choice as technological 'advances' permeate all aspects of life in the early 21st century via print and electronic media. Patrick contends that as it is their money, older adults should be allowed to control it how they want to, unconsciously paralleling Kirkwood's (2001) observations that as people age, choice often seems to be taken away. The infirmity of age undoubtedly sets barriers to certain kinds of choice, while financial hardship, an all-too-common companion of old age, sets others. Some of the factors fostering or inhibiting this uptake—the presence or lack of interests, aspirations, incentives, barriers, encouragement, necessity, and awareness of available, affordable training and support—are discussed later in this chapter in the section relating to Research Question 3.

As rapid change occurs with little or no opportunity to accept or reject it, relevance to lifestyle and pace of adoption of new technology is seen as preferable by many of the sample group to technology built "from the top down rather than from the ground up" (Moran 2005). A number of sample participants such as Hilda, Lorna and Alf report lack of success and satisfaction following costly formal discrete training experiences with no provision for follow-up support or opportunity to practice part-learned skills.

The inevitability and the speed of change in the age of technological connectivity (Davis, 2003) may also speed up the external societal changes which Redding, Eisenman and Rugolo (1998) and Withnall (2006) almost a decade apart, see as triggering the internal motivation to learn new ICT skills.

It can be expected that as new ICT technology daily becomes an integral and unavoidable part of the fabric of everyday life, more third age learners will seek training and support as part of their transition to the new digital retirement reality. It is imperative that policy makers look closely at mitigating the impact of the planned obsolescence which is geared to the youth, the corporate and the affluent market. The risk in denying affordable, easily accessible ICT choice to a significant proportion of the older age population is not only the marginalising of this group who are increasingly bearing the burden of service in the unpaid work sector. Even best practice informal ACE training and support can only reach those who are aware of the scant opportunities available and are able to bridge the increasing numbers of digital divides.

1.2 New technology adult learning pathways should match needs, wants and interests

Learning in the third age ranges along criss-crossing continua as needs, interests, aspirations, motivations, obligations and challenges change according to different internal or external factors in different contexts.

The early and later ICT adopters in this study who are self directed learners possess certain positive personality traits and inquisitive and alert minds (Candy, Crebert & O'Leary 1994; King 1997; Withnall 2006) and have a high locus of control and persistence. This group of e-seniors, when they have otherwise uncommitted time, learn the new skills required to use a computer and to access the Internet at different but steady rates, despite setbacks and previous negative learning experiences. Where there is strong motivation because of a need, a want or an interest, a combination of learning by trial and error, assertive efforts to seek formal or informal help and determination, generally results in success and satisfaction. A Computer Centre member, Hilda, demonstrates this as she reports getting up early to complete her housework and staying up late to finish e-Learn assignments that she finds challenging. She explains that she does not want the task in hand to beat her and this tenacity is shown as she fits in volunteer hours teaching residents in a nursing home as well as retaining 'on call' contact with the Computer Centre. Case study participant Alf, an early retiree in his

60s, reveals both his willingness to seek help and his reliance on self-directedness as he reports in Chapter 5 that his confidence was actually boosted by a less than satisfactory—inappropriate for him—formal ICT learning experience.

A third age ICT learning need expressed by parents and grandparents is to be able to quickly and easily communicate with family who are working interstate or overseas or when they themselves are holidaying away from home. Other needs arise with the unexpected request to prepare and distribute minutes for a community group, or when commencing or returning to formal study. Computer Centre assistant tutors Kath and Ada, novice learner David; NGO focus group member Rita, husband and wife e-seniors Alf and Jael and Karl and Freda, all keep in touch with siblings, children and grandchildren by e-mail and would not go back to 'snail mail'. They, like many of the others in this research study sample, supplement this contact with the more personal—if more expensive—special occasion telephone calls.

Interests and aspirations are well catered for as third age learners discover the ease of accessing limitless information from the Internet. Tutors Nan and Nora and assistant tutor Ada search for craft patterns and recipes. Kath and Hilda and novice learner Tina share tutor Diana's absorption in family history search. An interest in health information is also found to be high on the list of search topics. These new ICT needs, interests and aspirations often involve 'try before you buy' window shopping, especially for this age group. Alf's wife Jael tried out e-mailing and Internet searching at the local library for six months to be sure there would be value for money expended. This period is neither the longest nor the shortest Internet connection window shopping time noted during this study as some older adults connect to the Internet early in their Internet journeys, while others continue to use public access points indefinitely. David, for example has been e-mailing family members for more than three years, using public access points, but has plans to connect to the Internet at home in the near future. Pam and Tina are examples of widely different Internet access approaches. Searcher Pam arranged for home Internet connection as she delightedly found long-sought information in her first Google-search. Keen e-mailer Tina continues to use web-mail at the library or the Computer Centre when at home or at the online access centre when at the family beach house as her husband is not interested in any aspect of ICT.

The extrinsic ICT aims identified by the participants in this study are to learn how to use a computer as a tool and to access the Internet as the means to an end result. The intrinsic needs include the satisfying of curiosity and the realisation of latent aspirations. Some needs expressed coincide with the Hazzlewood and Kilpatrick (2001) typologies described in Chapter 3. 'Window shopping' is however found to overarch all aspects of ICT interaction as most of the older adults in this study show a keen interest in e-mail and searching as well as in exploring a range of other online activities as they become aware of the potential of the Internet. Computer Centre family history tutors Ada, Diana, Hilda, Kath and Nora are indulging their own special interests as they help new learners such as Charlie, Irene, Roger and Tina trace their family trees online. As mentioned in Chapters 4 and 5, most of the participants in this sample are e-mailers who gain confidence as they learn to communicate with family and friends and send and receive text and graphic attachments. Analysis of interview and focus group transcripts and documents volunteered reveals that a high proportion of time is spent by sample participants in both random browsing and purposeful searching via search engines to explore current or new found interests or to obtain information on a wide range of topics. E-seniors Karl, Heinz and Murray set up home pages for themselves and for community groups and with Diana and Roy, delight in showing interested learners 'what's in the box'. They belong to a peer interest user group, sharing their experience as they exchange information about the latest technology developments and build their own computers from components. Regardless of the level of ICT experience or whether categorised as early or late adopters of technology, older adults, like those in other age groups, 'window shop' new technologies as they become aware of them. This is consistent with findings by Ito et al. (2001) that older adults use the Internet for "social group interactivity and shared content" as they also cross the digital divide many times during individual Internet journeys.

1.3 Progress towards ICT literacy correlates with individual differences

Early and later older adult ICT adopters progress at different rates to their optimum interest and capacity levels as they master technical aspects of computer hardware, complex software and online applications.

There appears to be a pendulum effect for some later adopters of ICT as initial adrenalin rush success or de-motivating failure extremes experienced are modified by either familiarity or an increase in confidence and competence. Hilda and Laurie

started at opposite ends of the initial reaction-to-ICT scale and now both accept the comfortable neutrality that comes with computer and Internet end use familiarity. Laurie lacked confidence, but this gradually increased till she felt comfortable enough using computer technology to apply for jobs requiring ICT literacy. Hilda feels that the next excitement is perhaps just around the corner:

I remember how excited I was at the beginning when I achieved certain things, but now it's like I might be a little more blasé.

Older adults in this study, plateau at the basic or more complex ICT levels which satisfy their current needs and interests and which match their intellectual capacity and their budgets. Computer Centre members Charlie and Barbara have learned to word process documents to enable them to create journals to hand on to families, while FE focus group members Les and Helga have returned to further formal study, using their computers as tools—as means to their study ends.

The large majority of older adults from the sample recruited do not have credit cards, or make sufficient financial transactions to warrant using online banking. Patrick worked in a bank before his retirement and sees human error as one reason for him to continue his over-the-counter banking. Another reason Patrick and other community group treasurers give for not banking online is that they have to deposit cash and cheques as most of their members do not pay their subscriptions by electronic transfer. This study suggests that there are a wide range of ICT literacy skills among older adults. Further research is perhaps warranted to close a gap in research identified by Hargittai (2002) into the actual extent and breadth of computer use by those older adults who claim in surveys and polls to be computer literate.

The suggestion made in the Research Question 1.1 findings section of allowing a choice-without-penalty interim co-existence of over-the-counter and online banking would accommodate those older adults who have limited ICT expertise and confidence and whose outdated computer hardware and software are not suitable for online transactions as detailed below. This would allow older digital migrants (Prensky 2001) some respite to catch up with both the digital natives and the evolving new technology. Hodge (2005, p.1) reinforces this view as she reports that security researchers warn that personal computers were not designed to function as secure automatic teller machines (ATMs) and “could not be trusted for online banking or any other online transaction”.

It is implied that banks continue to promote e-banking as safe, rather than expending funds on installing secure home electronic funds transfer point of sale (EFTPOS) technology. Hodge's (2005) report, which is backed up by research by Caelli (2005), supports the caution expressed by Hilda, Ada, Merle and Patrick. This caution is also well-founded in that, whether the warning expressed above is warranted or not, many older adults, who are new to computing, do not have the resources to install the anti-virus, anti-spam and firewall protection which is recommended by banks as necessary before entering safely into online transactions.

The third age ICT learners in this study are keen to find out what the Internet has to offer them as new technological changes influence the seeking of training and support. There is a wish not to be left behind, but resentment is also expressed where financial imposts limit the available choices. After the first tentative steps are taken by older novice learners, it is important to cater for individual needs, wants and aspirations by modifying existing programs and providing encouragement and support. The diversity rather than the similarity of third age older adults is illustrated by the examples highlighted in Chapters 4 and 5.

The issues discussed in the Research Question 1 section reflect the impact or otherwise of the ageing theories reviewed in this study. The sample participants exhibit a range of behaviours dependent on their categorisation as early or later adopters of ICT and their personal attributes of self-direction or dependence on training and support as they strive to reach their level of current need and interest. The right of choice about the extent of individual online interaction, particularly in the area of financial transactions, is preferred by many older adults. The significance of the findings relating to Research Question 1 can be extended to apply to the whole research study and will be re-visited in the subsequent research questions sections in this chapter. These findings include that:

- diversity found within the third age cohort is evident in the outcomes that are reported by first and second step and more experienced ICT users;
- not all older adults have the same ICT needs, however, informal training and support provided by peer trainers in small groups in the informal adult community education sector aims to meet these needs;

- the third age is a time of reduced spending power for many. Cost of ICT access—hardware and software and Internet connection expenditure—can be prohibitive;
- it is not enough to provide affordable access to the Internet without ensuring that the content of websites matches expectations and warrants the time and effort spent in accessing them; and
- the third age is reported by the sample participants in this study to be one of increased rather than reduced family and community responsibilities.

This research study is concerned with the training and support issues and implications connected with a group of older men and women who are taking advantage of the opportunities available to them in the fourth ACE informal learning sector ‘great good’ third places (Oldenburg 1997; Falk, Golding & Balatti (2000), and in the further education secondary and tertiary formal institutions. This representative cross section of third age adults learning in retirement is a small fraction of the burgeoning older adult population which will increasingly be left behind if simple low cost electronic communication equipment is not made as useable and accessible to all as television and the landline telephone has been and the cell phone is becoming. It is a societal imperative (Swindell & Vasella 1999) that everyone who is able and willing and who has the ability, a want, a need or just an active enquiring mind, to be able to receive the training and ongoing support that matches these parameters.

Research Question 2: How do older men and women learn to use computers and access the Internet?

RESEARCH QUESTION 2 FINDINGS

2. 1 Awareness of learning styles and preferences assists ICT learning

Although the majority of older adults claim to be visual learners, most, whether early or later adopters, or in 2D- or 3D-ICT categories, mix and match learning styles to help minimise age-related physical, sensory and cognitive deficits.

2. 2 Motivation for ICT learning is often triggered by new interests

The motivation for learning in the post-compulsory education stage changes from extrinsic to intrinsic as third age ICT learners actively become aware of the need for training and support at different levels of formality in different areas of interest.

2.3 Gender learning differences are complementary, not competitive

Whether older men and older women have different or similar objectives and learning approaches, gender inequity is not found to be a major limiting factor in ICT literacy acquisition.

According to an OECD report (2001, p.11), ICT is the vision of the future and has profoundly changed the 'what and how' of education with "new capacities to acquire, share, organise and communicate tastes and information over both time and space". Lifelong self-directed learners in this study are found to be adventurous in their approach to unfamiliar situations, placing jigsaw pieces of information in a framework which enables them to achieve desired results with varying degrees of perseverance and resultant success in transferring information from one context to another. Pam showed this ability as she modified the instructions designed for an IBM compatible Windows PC to her Apple Mac and then, on the successful completion of the TAFE eLearn course, transferred the skills learned to the unfamiliar—to her—Windows platform so she could help non-Macintosh users. This reflective self-directed learner also transferred the learning principles from her remembered special education teacher training to a new migrant English language teaching environment. The self-esteem of new ICT learners is enhanced as small incremental successes are internalised and encourage further exploration (Redding, Eisenmann & Rugolo 1998; MacKeracher 1998). This is noted as learners like Pam, Hilda, Kath, Ada, Laurie, Irene, Louise and Lorna explore a range of options including community volunteer service, further study and paid employment.

Those without a background and history of continuous and fulfilling learning and with a low self-esteem drop out of training programs as they are subsumed by the ageism anti-learning stereotypes. They join the ranks of the disappointed non-adopters of ICT and may become technophobic unless they are given the opportunity for initial intensive and sensitive one-to-one assistance and ongoing, albeit weaning, support. Older adults can fall through the holes in the training net as occurred when filial pressure on Von to tackle training beyond her intellectual and physical capability resulted in the social isolation, which the urging to become ICT literate was intended to prevent. Confidence draining failure also occurred in Madge's case as she enrolled in the self-paced online eLearn course before she had consolidated the skills learned in a less structured slower-paced preparatory program. The well-meaning encouragement to embrace training

beyond current needs or readiness or in trying to fit the learner to the course, rather than the training and support to the learner, has implications for the whole range of stakeholders referred to throughout this thesis. Of particular relevance to the largely under-trained 'coal face' volunteers directly involved with the older adult novice ICT learners in the under-funded ACE programs, is the need for an awareness of their needs, which include their learning styles and preferences which are discussed in the next section.

2.1 Awareness of learning styles and preferences assists ICT learning

Although the majority of older adults claim to be visual learners, most, whether early or later adopters, or in 2D- or 3D-ICT categories, mix and match learning styles to help minimise age-related physical, sensory and cognitive deficits.

An unawareness rather than an awareness of learning styles actually employed is displayed by the older adult learners in this study. With very few exceptions, the first response by most older adults to a question about personal learning style is 'visual'. The immediate nomination of this sense, albeit with a modification of replies after reflection to include hearing and doing (ANTA 2000; Kilpatrick and Hazzlewood 2001) cuts across all education and life experience strata. The mixed mode learning styles actually employed depend on individual differences, as is found in other age groups. It was found in this study that many of the participants prefer and actually do mix and match styles as they have done throughout their lives, not just to help them overcome age-related cognitive deficit reality. An awareness of the learning styles and learning preferences by learners themselves as well as by trainers may mean the difference between success and failure, between a sense of achievement and raised self-esteem, and frustration and erosion of confidence and trust (Morris 1994; King 1997; Redding, Eisenman and Rugolo 1998; MacKeracher 1998; Burns 2000). The benefits of providing a customised range of audio—CD—and online multi-media approaches where these are available, as well as text-based instructions are shown in the progress reported by eLearn online Computer Centre participants such as Barbara, Charlie, Hilda, Irene, Pam and Yvette and in the evaluation of the course (Taylor, Rose & Wiyono 2004; Taylor & Wiyono 2004) reported in Chapter 4.

While chronological age is not found to be a limiting factor in ICT literacy acquisition, cognitive slowing needs to be taken into account by the learners themselves, the tutors and mentors, the course developers, the government, private and community training

providers, the policy makers and the funding bodies. Older adults learning in later life, often many years after their last 'formal' learning situation, may need more time to process information and associate it with what is already known. Many of the older adult learners in this study admit that they take a little longer to learn new skills than when they were younger.

There are many different ways older adult learners cope with the problems of memory diminution or desertion and cognitive slowing. These mechanisms vary with the individual and correlate with learning styles. Observing how learners compensate for these age-related decrements, reinforces the answers made by participants to the interview questions relating to memory and learning styles. These other ways of doing things include printing out instructions, making checklists or diagrams and most useful of all, having an actual or virtual e-buddy to phone or e-mail for help when needed. It is found that motivation for ICT learning, which is the topic discussed in the next section, is often triggered by new interests and this depends on the awareness of what ICT has to offer third age learners, the availability and affordability of both training and ongoing support, preferably among peers and in a friendly non-pressured environment.

2. 2 Motivation for ICT learning is often triggered by new interests

The motivation for learning in the post-compulsory education stage changes from extrinsic to intrinsic as third age ICT learners become aware of the need for training and support at different levels of formality in different areas of interest.

Motivation, whether in the workplace or in post-retirement activities, is not something some have and some don't have according to Burns (1995, p.179) who writes that motivation depends on "the needs of the individual within a situation" and further, "that motivation is the key to learning and the willingness to exert high levels of effort towards goals".

Both Burns' contention of a causal link between motivation and learning and contrasting suggestions by Tight (1999) and Carré (2000) that the mobilisation stick is more the learning trigger than the motivation carrot, are found in the results of an analysis of the data gathered in this study. For example, the lack of choice without penalty in relation to online banking is a topic that is raised strongly by sample representative participants Kath, Merle and Patrick.

Where there is motivation, for example, researchers report that initial success at short training sessions and small supplementary 'weaning' support, the most negative attitudes towards technology, and therefore towards learning about and via computers and the Internet, can be positively modified (Williamson, Bow and Wale 1997; Mott 2000; Burns 2000). This hypothesis has been shown in this study to apply equally to men and women, reinforcing the view that factors other than gender or age affect the acquisition of the ICT literacy aspired to by individual third age learners.

Kath is an example of a learner who was determined to succeed at a task—TAFE eLearn ICT units—at first sight thought by her to be beyond her capabilities. She reported how success in completing the course boosted her confidence and increased her self esteem. Les, a reluctant ICT user, commenced undergraduate university study during the life of this study, and after a brief computer familiarity course following the gift of a computer from his son, he is moving from mobilisation to motivation mode as he grudgingly admits that he cannot afford not to take advantage of the tremendous potential of the Net as a research information source. Pam decided to take up computing after a twenty-year lull as she said she wanted to be connected with the modern world and quickly regained her earlier skill. A self-directed learner with an enquiring mind, Pam is so delighted with her progress that she has offered her services to help refugees with their computer-based language and literacy study. Motivation for taking up ICT at home is family-driven as children pass on their old machines to mum or dad as was the case with Ada, Hilda, Kath, Tina and Von.

It has been noted in Research Question findings section 1.2 that ICT learning pathways should match the needs, wants and interests of the third age learning cohort. As people age, the relevance of learning new skills gains or loses significance in different ways for different individuals as opportunities present themselves and reverses occur in the life course. These changes have implications for both men and women as they lose partners or children and grandchildren move away and new formal or informal learning networks are formed. This also occurs when the older adults themselves travel or relocate to smaller easy-care homes and their needs change accordingly. These life changes often have an impact on the gendered use of ICT as men like David, Brian and Murray find a need to communicate with family and women like Kath, Barbara, Louise and Lena need to take over financial and other traditional male responsibilities. This

situation is consistent with role theory implications (Rosow 1976; Adelman 1994) resulting from changing life stage circumstances as discussed in Chapter 2.

The finding that gender learning differences are complementary and not competitive as discussed in the next section, is similar to the finding about age differences. Neither gender nor age differences are found to be as significant in ICT literacy acquisition as individual personal differences and varying external circumstances.

2.2 Gender learning differences are complementary not competitive

Whether older men and older women have different or similar objectives and learning approaches, gender inequity is not found to be a major limiting factor in ICT literacy acquisition.

A trend noted in the four years since the establishment of the informal training Computer Centre, is that while female participation remains at a constant level, male participation is rising. This change in the gender balance is occurring as men are accepting voluntary redundancy or early retirement and couples are attending training courses and support groups together. This is consistent with the trend in neighbourhood houses noted by Reason (1992).

Broos (2005) re-kindles the gender and attitude difference debate which was discussed in Chapter 2 by asserting that women are slower to achieve success than men and have more technological anxiety than women (Manheimer, Snodgrass & Moscow-McKenzie 1995; Cjaza and Sharit 1998; Barnett and Adkins 2004). MacKeracher (1996) discounts the gender learning difference argument as a counter-productive stereotype, seeing no benefit to be gained in making generalised statements. It is not possible to make more than a superficial synthesis about gendered use of computers and the Internet in this study, as ICT end use is dependent on a range of variables specific to the individual rather than to the gender. MacKeracher's (1996) point of view is confirmed in this study rather than Baxter-Magolda's (1992) findings that there are differences in how men and women go about learning but not so much in what they learn. Catering for individual differences in needs, wants and interests is the focus in the learner-centred small group training and one-to-one support provided in informal ACE training such as at the Computer Centre. It is also found that there is a complementary rather than a competitive relationship as couples learn ICT together, often having 'his and hers' computers, as is the case with Karl and Freda, Alf and Jael and Charlie and Jenni.

Gender influences are most strongly noted in the use of e-mail, as women tend to inherit the gendered family responsibilities of communication with family and friends from pre-electronic days. This is also consistent with the continuity theory (Havighurst, Neugarten & Tobin 1968; Atchley 1972), where though the communication method has changed from letters and cards and snail mail photographs to emails and instantly attached and dispatched still and moving pictures, the responsibility does not. Very few of the later ICT adopter men in this study use e-mail for family communication, however they are just as eager to receive news and photographs as the women and often add postscripts to replies sent to children, grandchildren and friends. The exceptions are the male e-mailers in the research study who are divorcees or widowers or whose partners are not interested in computing. E-seniors Alf and Karl, who enjoy cyber-partnerships with their wives take equal responsibility for e-mail communication. Both men and women third age learners in the further education focus group routinely use e-mail in peer interest information exchange and in networking with local and distant colleagues.

The telephone, however, has not lost its place as a prime communication choice for people like Barbara and Queenie, who only open their e-mail occasionally. Women members of the sample group report a nostalgia for carefully handwritten—even perfumed—letters and a preference for a more leisurely personal contact. What was found, however, in this study, is that gender difference is not a significant factor influencing either motivation to ‘window shop’ or the actual use of the various aspects of ICT. Gender is also not a critical issue in the discussion in the next section about the factors that foster or inhibit ICT acquisition by older men and women.

Research Question 3: What are the incentives for and the barriers to learning about and via new technology in later life?

RESEARCH QUESTION 3 FINDINGS

3.1 External and internal barriers to ICT literacy acquisition

The barriers to becoming ICT literate are due to both external and internal limiting factors, but can generally be overcome by persistence by learners, assistance from others and the use of adaptive technology.

3.2 Lack of unallocated time is a limiting factor to many in the third age

An unexpected finding is that a major factor reported to inhibit ICT learning by third age 'sandwich generation' active retirees, is a lack of time to practise skills learned.

3.3 Inaccessibility to resources and to online information

Accessibility by older adults to affordable, up-gradable personal computers, Internet connection and appropriate training and ongoing support are found to be essential elements in achieving success in ICT use.

The major overall finding in this study is a confirmation of researchers' consensus views that there are more barriers to the attaining of ICT literacy than there are incentives. These barriers, which are endorsed by the participants in this study, are summarised as follows:

- home computers with inadequate speed, storage capacity and memory;
- slow and costly Internet connection;
- lack of awareness of extent and nature of ICT benefits;
- physical age-related disabilities and impairments – sight, hearing, immobility;
- inadequate literacy and numeracy levels inhibiting computer and ATM use;
- anxiety about security and technology in general; and
- lack of appropriate and affordable training and technical support.

While the barriers are universal and easily identified, the incentives are less obvious and often unrecognised as such. The awareness of the information available and the instant communication possible, which cannot be ignored in this multi-electronic media saturation age, is reinforced by word of mouth. Family members provide encouragement often accompanied by the gift of an older computer as they upgrade. Many of the barriers reported do not become obvious until this stage is reached and it is here that help can be provided to foster ICT literacy acquisition. There are significant implications for a range of stakeholders and gatekeepers to bridge digital divides.

3.1 External and internal barriers to ICT literacy acquisition

The barriers to becoming ICT literate are due to both external and internal limiting factors, but these can be overcome by persistence by learners, assistance from others and, in the case of disability, the use of adaptive technology.

Some of the barriers for third age digital migrants are inherent in the technology itself. The complexity of current-generation computer hardware components, system and application software, and Internet navigation interfaces is such that it defeats its original purpose of reducing social isolation by providing an easily affordable method of obtaining information and communicating as in Spender's (1996) proposed global village.

Mechanical barriers to computer use are found to be the keyboard, the mouse and the screen. Manual dexterity and visual acuity are required to follow an insertion point darting erratically at the bidding of a less than firmly controlled mouse. Hand-eye co-ordination is reported to be a problem when trying to place the mouse arrow point in the centre of very small radio button circles, in tick boxes or on small icons as reported by Charlie, Enid, Les and Yvette. The continual eye-movement from screen, to keyboard, to workbook, altering focus and losing track of text place, icon position and 'qwerty' keyboard alphabet locations, causes both physical and mental strain. The age-related physical impairments in this sample group are not so severe that they cannot be assisted by adaptive systems and application software. Adaptive and assistive technology solutions for people with disabilities or age-related impairments have been readily available for some time (Williamson, Bow & Wale 1997). Many of these facilities are already installed in computers and there are implications for training providers to ensure that trainers are aware of these so they can assist the learners to take advantage of the available options. As part of the train-the-computer-trainer program and the computer familiarisation courses for novice ICT learners, Computer Centre tutors Ada, Diana, Kath and Pam have close ties with the local Independent Living Centre occupational therapists. These community-funded professionals provide ICT information and practical demonstrations of hardware and software aids to assist members with disabilities or age-related physical impairments at tutor training meetings as mentioned in Chapter 4. As a difficulty is reported by a learner or noted by a tutor, appropriate hardware or software is suggested for purchase by the committee to add to the core

equipment of the centre. The therapists provide a free home-based service for learners such as Enid and David, who purchase or borrow recommended equipment for home use.

Time-wasting correction of errors stemming from inaccurate or fumbling keystrokes result from a lack of familiarity with the 'qwerty' keyboard, as only a few of the women and none of the men are touch typists. This skill lack also inhibits the flow of thought to fingers and may be the reason for most of this group expressing dislike of online discussions and chat sessions. Mouse skills, which involve placing, clicking, double clicking, dragging and dropping, are second nature to the young, but do not come naturally to older adults, dubbed digital migrants by Prensky (2001). Most of the sample group wear glasses, but as only a few have specially prescribed computer glasses, there is some difficulty expressed in the results chapters in adjusting the focus between book and screen. Pam uses a specially designed mouse to accommodate the arthritis in her fingers and Roger uses a left-handed mouse following a stroke that weakened the right side of his body. External physical and sensory learner-linked deterrents, which limit ICT literacy acquisition, are age-related impairments such as a reduction in mobility, deterioration of motor skills and loss of sight and hearing acuity.

Internal learner-linked deterrents stem from inadequate literacy and numeracy skills, a truncated or negatively remembered education experience, cognitive ageing decrements or psychological or emotional attitudinal problems. A literacy/numeracy deficit means that much of the text-based material is out of the reach of many and this causes a lack of confidence and self-esteem before peers and the onset of panic attacks leading to hasty, inappropriate mouse clicks or keystrokes, lost work and even lost students. There are implications for ICT course developers and trainers without adult literacy and numeracy teaching experience in developing and presenting courses for those lacking these basic skills. Another age-related failing is sight impairment (Taylor & Rose 2004), a major problem in computer and Internet use which has implications for trainers and also for website designers who do not include provision for enlarging the text. The high 60s percentage of sight impairment noted in older adults by Clark (2004) from observation in his study of dependence on glasses is nearer 80 percent in this current sample group.

A percentage similar to that of sight dimming (60%) is reported by Clark (2004) regarding those suffering loss of hearing acuity. This largely concealed age-related

deficit is a significant barrier to learning with implications not only for trainers, but also for speakers at seminars, workshops and conferences, who either decline to use microphones or use them ineffectively. Impairments which can be addressed by employing adaptive technology and assistive strategies are often not indicated on entry questionnaires, thus hearing loss has not been quantified in this study, but a similar percentage to Clark's (2004) assessment could be expected. Hearing is mainly a problem when instructions are being given in a class or small group situation, leading to wrong pages being accessed or wrong key combinations being pressed. In text-based instruction from books, handouts and online tutorials, hearing defects are easier to conceal and as many older adults with mild to moderate hearing loss do not wear hearing aids, this is often unnoticed by trainers in large groups.

Cognitive ageing has dual implications for this third age group learning about and via ICT in later life. One aspect relates to the attendant memory lapses and the techniques employed to compensate for these decrements (Williamson et al. 2000; Sargeant & Unkenstein 2001) in the data gathered. The other cognitive ageing aspect is that more time is needed by many older adults to select and carry out ICT procedures (Manheimer, Snodgrass & Moscow-McKenzie 1995; King 1997; Cody, Dunn & Hoppin 1999; Burns 2002), and to practice and complete coursework within required time frames (Taylor, Rose & Wiyono 2004). The frustrating to infuriating thinking deficits which occur in this sample group of older adults, are often construed as nervousness about computers, which is often akin to technophobia. However, memory lapses also occur in everyday, non-technological contexts as people age and are also not unknown in younger cohorts. Memory problems are noted in some of the habits of the participants, as they go over previous work in an effort to commit it to memory rather than proceeding to the next stage and using their texts for reference. Nora and Irene are among the participants who speak openly about memory lapses and share strategies for overcoming these and moving forward while Madge and Von are typical of the learners who fall behind as they feel they must remember every step and shortcut, which impedes their progress and limits their satisfaction.

The older adults surveyed in this study are quite open in admitting not being able to remember many of the steps required in learning to use computers or to access the Internet. Solutions to this deterrent include memory-jogging strategies devised by

learners themselves or designed for them by others, such as the check lists, highlighting, reminder cards, journal entries and notations on texts reported by participants in Chapter 4. Despite Damasio's (2002) assertion that the brain is not a computer, it is suggested that analogies cannot be ignored. Just as the computer has short-term memory loss if work is not saved, so do many third age learners, whose attention is often distracted before they have associated new instructions with knowledge already secure in their long-term memories. Compartmentalisation is also a factor as generic information often remains filed mentally in isolation, rather than being transferred and applied to specific situations.

Initial cost and continual upgrades of software, available affordable technical assistance, accessibility of websites, age-related impairments and disabilities, initial negative attitude toward technology and social isolation are all barriers found to inhibit the older adults in this study from their reaching optimum ICT uptake potential. At least one of the barriers listed in the Chapter 2 literature review is reported by each participant in this study in the data gathered in interviews, focus groups, case studies and document analyses. The intensity of the concern varies with the size of the perceived barrier, however generally the strongest emotion is reported to be frustration. The smaller barriers are usually dismissed as challenges which trigger the search for a solution—often assistance in overcoming or side-stepping them. A barrier that is harder to remove as social changes bring additional family and community responsibilities in retirement, is the time barrier, which is the topic highlighted in the next section.

3.2 Lack of unallocated time is a limiting factor to many in the third age

An unexpected finding is that a major factor reported to inhibit ICT learning by third age 'sandwich generation' active retirees, is a lack of unallocated time to practise skills learned.

A barrier reported by almost all the participants in this study is the lack of time at all stages of ICT learning and use. This retirement predicament is related to both the greying of the NGOs and sandwich generation commitment (Abaya 1992), where many older adults find their time eroded through caring for older or disabled relatives or grandchild minding roles. This is apart from another time related issue—the need for extra time to do everyday tasks as well as to learn new skills. There is a recognition by third age learners that there is a constant need to continue to learn in a "time-starved

active retirement” (Sargeant & Unkenstein 2001), just to keep up to date with modern needs, where time has become the chief enemy of lifelong learning (Latham, 2000).

Some of the comments reported in this study which reinforce this view are:

time strapped; time starved; time erosion; time to finish the course; practice between sessions; time to look up things on the Net; time for one-to-one tuition; time for social contact; time to sit at a computer; no need—no time; time wanted to volunteer; no time spare in retirement; Net surfing could be a time waster; e-mailing saves time and money; on the back burner till find time.

Participants from all sections of the research sample report that time, or rather a lack of it, is a major inhibiting factor in their ICT learning journeys. Whether the comments are from NGO volunteers such as Louise, Rita, Merle, Bertha or Lorna, from the further education focus group members Les and Fiona, or from case study participants Alf, Jael and Pam, they reflect a busy, positive ageing lifestyle with many and varied personal enrichment and recreational interests (Withnall 2006), and family and community commitments. An oft-reported regret is of not having enough time to perfect ICT skills learned and to explore the tantalising wonders of the Internet glimpsed as their time is eroded by other activities and responsibilities. As Jael says, there’s a lot “on the back burner”. Multiple roles (Adler 2002) take a time toll as older adults acquire more rather than fewer commitments as a result of societal and demographic changes.

3.3 Inaccessibility to resources and to online information

Accessibility by older adults to affordable, up-gradable personal computers, Internet connection and appropriate affordable training and ongoing support are found to be essential elements in achieving success in ICT use.

Accessibility for third age learners pre-supposes that they have the appropriate equipment, knowledge and skills. Implications for website developers are that web pages are reported to be difficult to navigate, making information, which is often not obtainable elsewhere, inaccessible.

Initial cost and continual upgrades of software, available affordable technical assistance, accessibility of websites, initial negative or neutral attitudes toward technology, and social isolation are major barriers found to inhibit older adults’ reaching their optimum ICT uptake potential. Access to information and speedy and inexpensive electronic communication for third age learners depends not only on

awareness of what's on the Net and how to find it, but also the availability of access to a computer and the skills and knowledge to operate one. As with the barriers referred to in section 3.1, frustration is expressed by the third age ICT learners as they cope with user-unfriendly cryptic Internet web-sites and dead-end links. Elder-friendly websites are essential for ease of access to online information intended for seniors. Obscure links and jargon-laden content are also reported to deter novice older adult ICT users (Millar & Falk 2000; Foskey 2001).

Jael is particularly vocal about computer jargon, on her own account in her volunteer mentoring role. Computer Centre members Madge and Von express their dismay at not understanding 'computer-speak' as do many of the sample group. Charlie, for example, finds it hard to come to terms with using the term 'search engine', which he associates with mechanics. Many of the error messages are extremely stress making for already apprehensive ICT novices. Another barrier to overcome is the mastering of navigating skills to enable exploration of websites, many of which are poorly designed and presented. There is a very definite dissatisfaction with the accessibility of websites in both the literature reviewed (Mitchell 2002; Gough 2002) and in the data gathered in this study, where it is noted that it is only the self-directed learners with a strong locus of control who persevere and overcome awkwardness, ambiguity and other barriers, especially if the search is an important one. Otherwise, confusing over-crammed sites turn potential users such as Irene, Yvette, Tina, Helga and Les away, or frustrate even the most persistent.

The comments from sample participants in the Research Question 5 accessibility segment in Chapter 4 reflect the views of the whole sample that many of the websites searched are not easily accessed or indeed useable as pointed out by Mitchell (2002) and Gough (2002) for older adult ICT novices searching the Internet for information for essential or recreational purposes. This perceived need has been met in part by the Computer Centre tutors who applied for and received a philanthropic grant to set up a home visit ICT trouble-shooting and general support program for members. As briefly mentioned in Chapter 4, Reg and Roy have set up this program, which has been running for a year as Computer Centre outreach tutors, and increasingly, assistant tutors are on call as help is required in both their geographical and their expertise areas. The provision of this essential service for those who need ICT support in their own homes,

has implications for policy makers and funding bodies in providing grants which generally do not allow budget allocation for reimbursement for travel by volunteers. Implications for volunteers who train and support third age ICT learners are discussed in section 4. 3.

Research Question 4: What are the ICT training and support implication for older adult learners, trainers, service providers and policy makers?

RESEARCH QUESTION 4 FINDINGS

4.1 Independent and dependent ICT learners

Third age learning ranges from self-direction to dependence along a multi-strand ICT literacy continuum. Learners report varying degrees of success and satisfaction depending largely on context.

4. 2 Attributes of third age volunteer trainers

Third age volunteer trainers and facilitators of ICT learning insector are found to exhibit enthusiasm and dedication in one-to-one or group situations where they pool their knowledge as they continue to learn.

4.3 Implications for policymakers regarding training and support

Willing but untrained volunteers in under-resourced grant-dependent premises carry the burden of largely ad hoc training and support for ever-growing number of third age ICT learners.

The general issues and the particular implications for third age learners, and second and third age stakeholders and gatekeepers, both under-lie and over-arch the entire research project, as the title of the thesis indicates. This section looks at training and support from the point of view of the learner, the trainer, the service provider, the NGO and the government policy maker.

4.1 Independent and dependent ICT learners

Third age learning ranges from self-direction to dependence along a multi-strand ICT literacy continuum. The learners report varying degrees of success and satisfaction depending largely on context.

The importance of initial success when older adults are using a computer or accessing the Internet is stressed by Morris (1994), Redding, Eisenman and Rugolo (1998) and MacKeracher (1998), who also recommends that feedback should be appropriate and immediate and should be repeated each time a new element is introduced. These assertions are confirmed in this study by the many positive comments made in response

to interview questions, in focus group discussions and heard in casual training session exchanges. The satisfaction that results from even small successes (Burns 1995; MacKeracher 1998) needs to be fostered by context-linked and learner-sensitive guiding support and encouragement as third age learners window-shop new facets of computer and Internet technology. This positive approach has implications for practitioners in general and, in particular, for those who train the waged or volunteer trainers.

Answers were sought to the questions why, how, when and where third age ICT learning takes place, what is learned and what is done with the new knowledge and skills. From the data gathered it was found that the third age learners in the current sample are accessing new technology for a wide range of purposes, either at home or at a variety of formal and informal, actual and virtual training and support facilities. Many are committing a substantial amount of time to community NGO service using their ICT skills in their active membership capacities.

The adult learning concept of moving from the known to the unknown is open to debate in considering ICT interaction, as with the daily advances in technology, the reverse is the operative paradigm with a mind shift needed to accept having to move from the unknown and unfamiliar to the known and comfortable. The use of the Johari window concept, as mentioned by members of the return to formal education focus group in Chapter 5, is used by Jenni to help novice learners to come to terms with a totally new learning concept by linking new learning to old experience. Self-paced online learning does not suit some older adults (Fidishun 2000). Von, Madge, Charlie, David and Roger are examples in this study of ICT learners who prefer a supported step-by-step classroom style of teacher-directed instruction. Others like Pam, Irene, Hilda, Karl and Freda, Jael and Alf delight in the exploratory nature of online learning. This recognition of the possession of a variety of learning styles and preferences by members of the third age cohort is of particular importance in helping novices to overcome the initial anxiety experienced with new technology by offering a range of learning materials. Barbara, Pam, Yvette and Hilda are examples of latent self-directed learners, who enjoy the freedom of online learning as they can work when they want to, whether this is in the early morning or late at night. They achieved satisfaction from finishing the e-Learn course well within the allocated time and this experience encouraged them

to surf the Net to find other online courses. Pam and Hilda can fit online learning into their busy lives and Barbara, whose mobility is now limited is overcoming potential social isolation by joining U3A and other online courses without leaving home but with actual or virtual Computer Centre e-buddy support for her Internet excursions.

4.2 Attributes of third age volunteer trainers

Third age volunteer trainers and facilitators of ICT learning in the ACE sector are found to exhibit enthusiasm and dedication in one-to-one or group situations where they pool their knowledge as they continue to learn.

The third age trainers interviewed and observed during the life of this research project, whether categorised as early or later ICT adopters, almost without exception exhibit a compassion for their peers who are learning to use computers to access the Internet. Enthusiasm, which Redding, Eisenman and Rugolo (1998) place above other attributes for supporters of novice older ICT learners, is evidenced in the commitment of volunteer peer tutors, assistants and management committee members. An instinctive awareness of adult learning principles and a sincere desire to assist is observed in the training methods of both early and later ICT adopter tutors and assistants in this third age sample, as well as many of the attributes of the ideal facilitator as listed by Houle (1972). Some of these attributes of the ideal facilitator include approval, support, friendly encouragement and regard for the learner as an equal. Houle's ideal learning place has a warm and comfortable relaxed atmosphere, which equates with the non-pressured environment found in volunteer-run seniors' computer clubs, online access centres and libraries. The Computer Centre featured in this study is such an informal learning venue and provides opportunities for social interaction and networking, a mix of training and support experience, a comfortable environment, a generous ratio of trainers to learners and a variety of learning pathway options.

MacKeracher's (1998) recommendations that the ability to remove disincentives should take precedence over the employment of active motivation strategies is a low-key deficit approach which has been used successfully by facilitators in the Computer Centre featured in this study. Another topic for discussion is whether to employ a teacher-driven approach (Brookfield, 1991), a learner-centred didactic approach (Jarvis, 2001), or a modified, more Socratic learner-driven facilitation (Burns, 2002). Brian is an early ICT adopter who revels in the complexities of the technologies he has embraced for many years (Redding, Eisenman & Rugolo 1998) and never tires of

reminiscing about the early days of computing (Barnett and Adkins 2004) as he adopts a teacher-driven mode of instruction. At the Computer Centre, he is paired with Nan, who is also an early ICT adopter, but is not as interested in what was and is 'in the box' as in how to make all the components work. This pairing is useful as Brian works with the more advanced (male) learners, who are interested in building their own computers and also provides technical support for Nan, who gently uses a learner-driven approach to guide the first and second step learners through their courses. Diana is a highly successful trainer who combines both teacher and learner-centred approaches as she alternates in her classes between group instruction for learners and assistants and, with the help of her assistant tutors, the individual catering for highly specialised needs. Later ICT adopter assistant tutors Ada, Hilda, Lena and Kath, who remained at the Computer Centre after they graduated from the e-Learn and a range of informal sessions, assume a modified middle way learner-centred approach. Although they require technical support and the safety net of the presence of more experienced tutors, these older later adopters have a refreshing clarity of presentation and an obvious empathy with older novice learners as they report that they "remember what it was like not so long ago". Facilitators and assistants in the Computer Centre, whether 2D- or 3D-ICT literate, are found to exhibit enthusiasm and dedication in actual one-to-one or group training sessions or in telephone or online helpdesk situations.

4.3 Implications for policymakers regarding training and support

Willing but untrained volunteers in under-resourced grant-dependent premises carry the burden of largely ad hoc training and support for ever-growing numbers of third age ICT learners.

The implication for policy makers and public purse-string holders in this line of argument is that parsimony in budgeting for affordable and appropriate ICT training and support provision for older adults may already have produced a less desirable cyber word association, that is, 'e' for exclusion. The current piecemeal-funding system encourages an NGO mendicant mentality (Hazzlewood 2002), as ICT training for older adults is considered by second age policy makers to be a luxury rather than a necessity (Haddad 2000). Ferlander, Timms and Timms (2001, p.118) air both the pessimistic and the 'Utopian' sides of the ever-widening spread of new computer-based technology into all "social, cultural and economic activities (e-commerce, e-learning etc.).

The report that this argument has polarised opinion as to whether it makes for social exclusion for many or social inclusion in all aspects of modern life.

Many of the government-subsidised ICT programs for adults are only available to those eligible to return to the paid workforce despite the need for similar ICT skills in the volunteer sector. Irene and Bertha, who prefer to contribute their time and effort to helping others in the community, experienced this barrier and another in that many formal ICT courses are beyond their means. They are 'doers' (Jarvis 1994), both trying to maintain their physical health by including some regular exercise each week. Irene is treasurer for her women's golf club as well as for the Computer Centre and Bertha plays social tennis once a week. Other volunteers in similar family situations, who initiate and maintain informal ICT training and support for their peers are time-penalised as they apply for and administer small or larger grants.

This lack of a standardised approach is also not addressing the growing need to promote ICT literacy beyond a rudimentary hobby level. Some older men and women who wish to remain in or re-enter the workplace will be disadvantaged by lack of adequate ICT literacy skills to fill the expected baby bust paid and volunteer employment gap (Wagner 2000). Nan and Laurie have shown that they are employable, not through traditional formal pathways, but via informal learning, as they 'window shopped' introductory informal introductory ICT courses and gained the competence and confidence to move on to formal study and back into the paid workforce. Tutor Maria and assistant tutor Ada have obtained part-time employment and continue to volunteer at the centre, as does Nan, one day a week. Les has completed half the units required for his Bachelor of Arts degree and five women and one man who completed a two-unit TAFE eLearn online course at the Computer Centre have enrolled in a full Certificate TAFE Information Technology course. Three of these, tutor Norah and e-learners Irene and Yvette are participants in this study. The stratification theory, which is such a convenient benchmark for second age policy makers' reports, homogenises third age learners (Williamson 1995) and makes no concession for the extraordinary diversity of this 50-plus age cohort. Giving lip service in glossy reports which put the onus of community learning on the ill-equipped and presumably autonomous learner (Martin 2000; Jarvis 2001) is both short-sighted and counter-productive. Lofty political rhetoric (Jones 2002) does little to accommodate those who are anxious to acquire ICT literacy

and does nothing to address the engaging of the disengaged such as Queenie, Merle, Madge and Von, who are becoming ICT alienated and marginalised. An example of the non-value of the elderly in relation to lifelong learning policy documents in Australia is shown by the absence of reference to this age group in Nelson (2005). A novice older adult learner voices a generally expressed view as she wonders why “TAFE and other government departments are so well equipped, when seniors are running raffles and struggling to make ends meet in places like the Computer Centre”.

Two extremes of the approach to training may contribute to this lack of satisfaction. These extremes are the information overload ‘too much too soon’ expressed in the eLearn evaluation (Taylor, Rose & Wiyono 2004) and the ‘too little too late’ which allows so many capable and curious older adults, so described by King (1997), to turn back from barriers or slip through the gaps in the many digital divides. Madge and Von exemplify both these extremes of ICT training and support provision. The vital one-to-one support required was not provided soon enough to assess the learning limitations of these women and the pressure of trying to keep up with the group proved to be overwhelming. Examples of the too little too late ICT learning barriers are found as many older adults are turned away by a lack of information, or only become aware of opportunities as Yvette did, by chance. The other extreme is highlighted by the older learners who abandoned the formal time-limited fast-pace TAFE-based e-Learn course, but who retrieved their sense of achievement and self-worth when they transferred to the same, but slower-paced e-Learn course at the Computer Centre with volunteer e-Buddy support. Another important deterrent is a mis-match in learning styles and mode of instruction as participants in mixed age training situations find the pace too fast and the content too difficult or inappropriate. This is as reported by sample participants such as NGO focus group member Lorna, Alf and Rita. An implication for training providers and trainers is that unsupported ICT training should not exceed end use need or ability and the capacity of the learners.

Research Question 5: How do the skills, knowledge and information gained from accessing computer technology add to community social capital?

RESEARCH QUESTION 5 FINDINGS

5. 1 Diversity of interests found using adult literacy filter

A picture of family communication, personal enrichment, extension and exploration, volunteer community service and a general raising of self-esteem emerged from an analysis of what is done with the new ICT skills and knowledge acquired.

5. 2 Volunteer effort adds to community social capital

Volunteer involvement by older adults, who are using their new found ICT skills and knowledge to benefit family, friends and strangers, in community NGOs and in the wider social sphere as the globe greys, adds quietly, consistently and considerably to community social capital.

Social capital outcomes with their inter-related networks of bonding, bridging and linking add substantially to community social capital as the older adults in this study settle quickly into formal or informal third age ICT learning situations. These third age learners have either arrived at their optimum current 2D-narrow or 2D-wide ICT plateau or are moving towards broader and more complex 3D e-senior literacy acquisition. They are all travelling at different rates, with different motives, different training and support regimens and with different levels of success. The social capital contributed by these third age ICT learners to their regional learning community is significant as they move within and between government-based and NGO groups. Lorna, Louise, Rita and Sally are examples of third age micro-level transformation as they use their ICT knowledge and skills in community volunteer service. They gather information from online sources, disseminate it to their members at meso-level community meetings and prepare submissions for presentation at national and international conferences and at local, state and federal government macro level consultations.

Retirement from the paid workforce or parenting has come to be accepted as a time of fulfilment with the time and the money to pursue recreational activities or to dabble in hobbies, to travel or to pursue informal learning or formal study or to engage in community volunteering. The older adults surveyed have very definite views on the personal benefits to be gained from learning to use a computer to access the Internet.

These benefits cover a wide variety of craft and hobby activities as well as formal and informal study and family and community volunteer involvement.

5.1 Diversity of interests found using adult literacy filter

A picture of family communication, personal enrichment, extension and exploration, volunteer community service and a general raising of self-esteem emerged from an analysis of what is done with the new ICT skills and knowledge acquired.

Coding of the data gathered from the current sample using an adult literacy filter as described in Chapter 3, found that a wide variety of ICT interactions is experienced by this diverse third age learner cohort. The importance of family support as an incentive for older adults taking their first steps towards acquiring ICT literacy cannot be underestimated. Computers are 'handed up' to parents by adult children who are upgrading their equipment (Scott 1999) and who arrange and pay for initial Internet connection. While children, grandchildren and neighbours provide occasional actual or virtual help, most older adults need initial and regular training and ongoing support until they are at least basically 2D-narrow ICT literate. Hilda, Kath and Wendy received their first computers from their sons, who moved away interstate or overseas and wanted to make family communication easy. Tina acquired a superseded computer from her son-in-law's office and Barbara's granddaughter not only provided a computer but offered regular lessons and support. E-mail communication between family members, who are separated for short or longer periods is speedy and economical and, especially when grandchildren are involved, helps to counter loneliness. This is seen as Ada and David learn to download e-mailed family photographs at the Computer Centre or Alf is the means of enabling his non-computer literate sister and brother-in-law to see a picture of their first great-grandchild.

As Jarvis (2001) writes, there are many and varied ways in which seniors can continue to both learn and work following retirement. Adult literacy coding reveals that ICT end use can be visualised in the shape of a truncated pyramid with a majority of the older adults in this study, comfortable at the base level on 2D-narrow or 2D-wide paths or vertical ramps as they are involved in a wide range of supported or independent computer and Internet-based end use activities. Clustered at the uppermost level, a few 3D early and later adopter innovators (Rogers, 1995; Adler, 2002) are involved in more sophisticated and complex ICT interactions. In between, as the later adopters gain

confidence and experience, some broaden their 2D-narrow horizontal and vertical pathway ICT activities while others, already in 2D-wide mode move towards their level of interest and competence among other 2D-wide and 3D- ICT adopters.

Older adults in this study report a wide variety of ICT-linked activities. These activities, made possible by learning to use the computer and Internet aspects that interest them, enrich their lives and those of others—family, friends and strangers. Ada, who had no formal training before completing the eLearn course since leaving school at fifteen, is now enrolled in a TAFE Business Management Course. She has a part time computer therapy volunteer placement in a nursing home in her dual-volunteering role as an ICT tutor at her Seniors' School and at the Computer Centre, and also coordinates the bi-weekly Computer Centre computerised machine embroidery group. Louise is now able to do her own online research for her multi-NGO roles and conference papers as well as e-mailing family and colleagues with trouble-shooting help from a grandson and Computer Centre e-Buddies. Jill has a part time job and is completing an online counselling course. Irene and Yvette have enrolled in a post-eLearn TAFE IT course, Irene to help her with her club treasurer roles and Yvette in her new role helping novice ICT learners. Kath and other members of Diana's computer graphics class design brochures and posters for the Computer Centre as well as certificates for guest speakers and illustrated greeting and business cards. Hilda's colourful animated e-mails bring smiles to the faces of the recipients and to her fourth age residential care students where she volunteers between organising family reunions online.

The assertion that many older people who begin as students in community learning programs subsequently make voluntary commitments to help others (Falk, Golding & Balatti 2002) is borne out in findings in this study. The acquisition of computer and Internet literacy benefits both the learners themselves and the community as they apply their new ICT skills in a range of volunteer activities, not the least being tutoring and supporting third age ICT learners in community-based programs.

5.2 Volunteer effort adds to community social capital

Volunteer involvement by older adults, who are using their new found ICT skills and knowledge to benefit family, friends and strangers, in community NGOs and in the wider social sphere as the globe greys, adds quietly, consistently and considerably to community social capital.

The social capital concepts of bonding, bridging and linking (Woolcock 2001) are found to be overtly and covertly present in the community-based activities carried out by all the participants in this study. Bonding quickly occurs as newcomers are welcomed and blend into the community groups in the ACE sector. Bridging ties between groups are noted as third age NGO members cross organisation boundaries or stretch their volunteer service in the 'elastic networks' referred to by Falk, Golding and Balatti (2000). Linking by older adults at the micro local and meso state levels is reported with both the wider macro national and international and the narrower hierarchical government and semi-government bodies.

The social capital value of volunteer involvement of the members of NGO focus groups and ACE training and support groups such as the Computer Centre is inestimable. The human capital contribution by these third age ICT learners to the local and regional community and to the wider society is documented in Chapters 4 and 5. There is a rich pool of human capital knowledge and experience and also a significant social capital contribution through volunteer effort within the third age ICT literate cohort, as is found in this study. Communities benefit in many ways as active retirees accept that community service on committees has long passed the pen and paper era and tackle the many tasks such as word processing and e-mailing newsletters, minutes and reports, that require computer and Internet use. Other contributions to community social capital include the telephone counselling Wendy and Jill are engaged in, the mentoring involving Jael, Sally, Fiona, Louise and Marian and the tutoring and help given to third age ICT learners at the Computer Centre and other seniors' groups and community-based programs. The promotion, encouragement and support of learning throughout the lifespan adds to the store of social capital in rural and urban communities and is of value to government and non government organisations, policy makers and professional and volunteer service providers. Millar and Falk (2000, p.5), for example, suggest that "older people who are active and learning contribute directly to society, and also

indirectly by easing the economic cost of health care and associated services". There is ample evidence of such contribution in this research study sample.

SUMMARY OF RESEARCH QUESTIONS FINDINGS

A picture has emerged from an analysis of the data, of a diverse group of third age men and women who have learned or who are learning to interact in different ways with a range of computer and Internet technology. Third age learners such as Bertha, Louise, Rita, Pam, Jenni, Ted and Sally, who have a continuous learning history, a comfortable, if modest, socio-economic status and/or a high locus of control, have a breadth and depth of computer and Internet use paralleling that observed in much younger cohorts. By contrast, Merle, Patrick, Tina, Von and Wendy, whose learning history is minimal or spasmodic and who are using largely outdated computer technology in an effort to meet a range of simple needs and wants, encounter a variety of hurdles which limit their progress. While inadequate equipment and age-related impairments cause often seemingly insoluble problems, these learning barriers are being overcome where there is initial and ongoing support from family and friends and appropriate affordable accessible formal and informal training. Much informal ICT learning occurs at public access and community-based fourth sector informal learning centres. The Computer Centre featured in this study, for example, provides ICT training for seniors by seniors and "is attracting a group of people who find that many computer courses are too demanding, too long and/or move at too fast a pace" (Taylor & Rose 2004, p.8).

While chronological age is confirmed as being less important than biological age in regards to attitude to learning about and via new technology, age-related physical, sensory and cognitive deficits are present in varying degrees in this third age group. Adaptive hardware and assistive software technology (Williamson et al. 2000) goes some way towards helping to bypass these external barriers. Some of these assistive devices are glasses specially prescribed for computer use, closed circuit television (CCTVs) in libraries and public access centres, ergonomic keyboards, visual signals to replace auditory alerts and mouse alternatives to suit arthritic, stroke-affected or damaged hands.

Finally in this section, opportunities for new or further study are outlined. These gaps in research into third age learning and living in a rapidly changing world are directly related to the longer lives made possible by new advances in science and technology.

ICT learning includes documenting the wealth of human capital experience contained within the third age cohort and the strengths and weakness of available ICT training and support.

OPPORTUNITIES FOR FURTHER RESEARCH

A review of the literature and an analysis of the data gathered in this study reveal gaps in research about the adequacy of available, appropriate and affordable ICT training and support for third age learners. Four of these gaps suggest opportunities for research:

- 1 Can lateral thinking provide solutions to reported third age digital gaps, divisions and divides? Are the third age digital divides insurmountable or can they be overcome simply by second and third age lateral thinking allied with the technology which is well able to solve negative accessibility problems. The advantages to all levels of society by the facilitating of local and global connectivity and inclusivity for the many, far outweigh the material gains for the few, and any government or private sponsorship cost.
- 2 While there is a considerable body of quantitative information about older adults' computer use and Internet access, there is very little qualitative research published about the actual nature and extent of this ICT interaction (Hargittai 2002). There are discrepancies in reports which indicate a gap in current research between quantitative poll statistics and qualitative data. There is therefore justification for the conducting of qualitative research projects to formalise anecdotal evidence of the benefits of ICT acquisition to older adults in retirement, their families and their communities.
- 3 What is the economic value of third age volunteer human and social capital contribution attributable to ICT literacy acquisition? Much social capital is generated due to the generosity of volunteers, many of whom are third age ICT learners. Further research is needed to assess both the financial and social cost to older adult volunteers and the extent of the social capital value to communities as the doom and gloom prophecies of third age dependency on the young, proliferate. A gap exists in research about third age lifestyle benefits and costs - the actual social capital credits and debits (Stoecker 1998; Colwell 2000). Research is needed into how much government responsibility for including the

socially isolated is evaded by a largely un-documented dependence on volunteer effort.

- 4 What effect, if any, do early childhood experiences have on ICT learning in later life? One example is lateral transposition, the forced change from left to right hand dominance, which was a common practice when many of the third age learners in this study started their education. Another example is the effect on lifespan learning of another early childhood experience, musical training, which is thought by neuro-scientists to have an effect on lifespan learning. As in the other research areas, it is not enough to collect quantitative statistics about whether older adults were exposed to music in their youth. A combination of qualitative and quantitative investigation into the nature and extent of the musical experience would add to the body of knowledge for early childhood educators.

Answers to these questions could be sought in separate studies or could be part of larger research projects. These answers could also throw light on a wider question: Is the Internet the great includer or the even greater excluder of Prensky's (2001) and West's (2003a) digital migrant older adults in the technological youth-orientated cyber-world? The third age learners in this study who have taken up and are keeping up with new technology and who are moving outwards into the community with their new skills are found to have a healthy self-esteem and a balanced positive ageing outlook akin to agelessness as described by Throssell (2004).

CONCLUSION

New technology in first world countries may not yet have reached the peak of complexity before the ever-increasing number of expensive 'bells and whistles' included with new computers are rejected by the digital native generations. It is already being shown that low-cost simple ICT equipment can be provided to reduce the tyranny of distance, whether in outback Australia, darkest Africa or for the home-bound social isolates in rural and metropolitan areas (Daly 2005). The planned obsolescence with its costly unnecessary upgrades out-pacing both the learning-span of many older adults and their financial resources, complicates rather than simplifies ICT literacy acquisition for later adopters who have basic or specialised needs, wants, interests and aspirations. On a more positive note, the cost of technology is becoming progressively more affordable

and therefore more accessible to all potential ICT adopters. Awareness of the advantages of becoming ICT literate is increasing, as are the incentives of low-cost training and support offered to third age learners as barriers are removed, lowered or side-stepped.

There are implications for learners as changing circumstances provide the motivation to seek appropriate training and support to match new technology needs and interests. The Computer Centre is showcased as an example of informal ACE provision that combines social interaction with skills development. It is imperative that policy makers recognise the urgent need for up-skilling and provide the resources to fund low cost training and support that matches the ICT needs, wants and aspirations of adults learning in retirement. Efforts such as the production of an awareness and instructional DVD on computer and Internet basics are being made by the Federal Department of Education, Science and Training to assist older Australians to address the ICT deficit gap. While this is a big step forward in making ICT literacy available for all, it is directed to those who have the latest technology, in this case DVD players, whereas the majority of older people have not yet moved to using CDs.

While the attributes of the older adults and the outcomes reported in this study cannot be generalised to the wider community, the purposive sample recruitment aims to represent a cross-section of third age ICT learners in a regional community in the first few years of the 21st century. Many third age men and women who are living longer healthier lives between yesterday and tomorrow and who are participating in ICT training and support programs by choice, chance or persuasion, are found to be moving purposefully or randomly, alone or in groups on the Super Highway.

A word, which is mentioned more often than money by participants in all groups, is 'time'. This constant referral to a lack of time to accomplish any or all of the tasks mentioned could be construed as age-related cognitive slowing. I argue that this is not necessarily the case as this thesis has recorded the activities of a group of older adults in the third age of 'active' retirement. These older adults are members of the so-called sandwich generation as they juggle grandchildren and close family member care, volunteering in multiple situations, taking part in sport and recreation activities, visiting family and friends in other states, travelling overseas, learning to use computers and accessing Internet facilities, returning to formal study, attending conferences and

workshops and sitting on community committees. It is not surprising that time constraints are uppermost in the reports of this sample group. There is a positive bias toward ICT learning in this research study as the third age men and women recruited are predisposed to learn enough about using a computer and connecting to the Internet to reach their personal goals and to suit their community volunteer service needs.

These findings reinforce the diversity rather than the similarity between people as they age. There are implications here for learners, trainers, training providers, website developers, funding bodies and policy makers. The non-adopters who see little of value to them in becoming ICT literate at present and the reticent or reluctant ICT adopters will need support in acquiring the new knowledge and skills which will increasingly be a necessity rather than a luxury (Haddad, 2000).

Another view, which has implications for all stakeholders, is the assertion (Candy 2000) that it is imperative that everyone from the oldest to the youngest becomes and remains a lifelong learner. Learning in the 21st century technological knowledge society is synonymous with ICT learning. The third age learners who take-up and keep-up with new technology and move outwards into the community with their new skills are found to have a healthy self-esteem and a balanced positive ageing outlook akin to agelessness as described by Throssell (2004).

There is a danger of cultural elitism in defining 'learning' from the Internet or from anywhere else. It is surely just as significant for a novice older ICT learner to find a new recipe, a lost ancestor or an embroidery website as it is for the Internet to be used for research by a third age learner commencing or returning to formal study. To zoom in to a place of origin or a projected visit, to watch world events as they happen via webcams or to relax with a game of Solitaire while gaining mouse-skills via Haddad's (2000) touch of a button and glare of a screen are some of the magic moments reported by the third age digital migrant cyber-travellers who accompanied me on this research journey.

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APPENDIX A: LITERATURE REVIEW CORE PAPER SUMMARY

N.B. Reference to chapters in this summary refer to a literature review:

Hazzlewood J. (2001), *Third Age Learners and New Technology: A literature review*.
Unpublished Education Masters research. University of Tasmania.

1: ANTA (2000), Australian National Training Authority, *National Marketing Strategy for Skills and Lifelong Learning*, ANTA Consultant Team,
www.anta.gov.au/lifelong

Key words: Attitudes; adult learners' differential use; gender differences.

Reason for inclusion: The ANTA consultative team's segmenting of the Australian national learning community, throws light on the learning styles of older adults and their interest in accessing new technology. The findings relating to older adults span the questions, themes and chapters.

2: Barnett, K., Buys, L. and Adkins, B. (2000), Information and Communication Practices: the Joint Concerns of Age and Gender in the Information Age, *Australasian Journal of Ageing*, 19 (2).

Key words: Older adults; gender and age differences; new technologies.

Reason for inclusion: This paper 'reviews the place of new communication technology in the social context of life course experience, retirement and leisure, in terms that recognise gender difference' (p. 69). The findings make a substantial contribution to the arguments in Chapter 5, gender and age differences, a theme which emerged from the literature review.

3: Buys, L. (1998), Computers: a Learning System that Increases Interest and Confidence *Australasian Journal on Ageing*, 17 (1), pp. 40-41.

Key words: Oldest old adults; computer training; residential care; benefits of mental stimulation.

Reason for inclusion: The findings from this study that individualised computer training and Internet access 'may significantly increase interest and confidence in using computers within the oldest old category of adults' (p. 41) have implications for training and support program development (see Chapter 7). The paper is also useful as a comparison with that of White et al. (1998) who also studied older adults in residential care and whose program included intergenerational student support as well as one-to-one instruction.

4: Czaja, S. J., Sharit, J. (1998), Age Differences in Attitude towards Computers *Journal of Gerontology Series B-Psychological Sciences and Social Sciences*, 53 (5), pp. 329-340.

Key words: Older adults; Technologies; Arousal; Stress.

Reason for inclusion: The findings from this scientifically based study contribute significantly to the arguments about older adults' attitude toward computers as featured in Chapter 4 and to the discussion in Chapter 5 about gender and age differentials. The theme examining attitude toward new technology emerged as a significant factor in reply to the how, what and why research questions asked.

- 5: Foskey, R. (2000), *Healthy Seniors Initiative Project: Increasing educational opportunities for rural and regional older Australians*, Final Report to Commonwealth Department of Health and Aged Care, The Rural Development Centre, University of New England, Armidale, NSW.

Key words: Online courses; rural isolates; computer use by older adults.

Reason for inclusion: This study provides answers to the research question about what older adults do with what they learn from online courses and touches on factors fostering or inhibiting application of that learning. The findings add weight to the argument that 'increasing the opportunities for participation in lifelong learning has the potential to improve the well-being and quality of life for older people' (p. 2) and are discussed in Chapter 3.

- 6: Irizarry, C. and Downing A. (1997), Computers Enhancing the Lives of Older People, *Australian Journal on Ageing* 16 (4), pp. 161-165.

Key words: Older persons marginalised; assistive devices need; new technology helping new technology access.

Reason for inclusion: This paper synthesises research which adds to the store of information about older adults' attitude to new technology as detailed in Chapter 4. It also offers recommendations for matching training to the needs of older adults offering answers to the research question on training implications discussed in Chapter 7.

- 7: Jones, B. D. and Bayen, U. J. (1998), Teaching Older Adults to Use Computers: recommendations based on cognitive aging research, *Educational Gerontology*, 24 (7), pp. 675-689.

Key words: Older adults; special instructional needs and recommendations; cognitive ageing research review.

Reason for inclusion: This paper documents research into age-related cognitive changes and is useful in helping to identify special instructional needs of older adults learning to use computers, facilitating access to information and communication. The findings about older adults' attitude toward computers are discussed in Chapter 4; the implications for training older adults in use of technology are examined in Chapter 7.

- 8: Kelley, C. L., Morrell, R. W., Park, D.C., and Mayhorn, C. B. (1999), Predictors of Electronic Bulletin System Use in Older Adults, *Educational Gerontology*, 25 (1), pp. 19-35.

Key words: Computer training for older adults; older younger adult comparisons.

Reason for inclusion: This paper investigates the issues of whether the small changes in attitude resulting from brief computer training will alter behaviour in any meaningful way and/or whether other training outcomes are predictors of subsequent behaviour. The answers to both these questions are relevant to topics discussed in Chapters 4 and 7.

9: King, D. (1997), *The Virtual Older Adult Learner*, CAUCE, Canadian Association for University Continuing Education Conference, Saskatoon, Saskatchewan, Canada.

Key words: Learning needs of older adults; fears and resistance to new technologies; technology-based learning adapted to needs.

Reason for inclusion: Following a review of 90 research papers, a three year plan was developed aimed at enhancing the lives of older adults through the use of learning technologies. The study was chosen for its complex yet efficient multi-method research design which was developed following a thorough search of the published literature as well as the information it provided about older adults' attitude to computer training and the use of adaptive technology to match training to their needs and capabilities. Recommendations are highlighted in Chapter 7.

10: Manheimer, R., Snodgrass, D. and Moskow-McKenzie, D. (1995), *Older Adult Education: A Guide to Research, Programs, and Policies*, Greenwood Press, Westport, Connecticut - London.

Key words: Lifelong learning; an ageing society; gender and age differentials.

Reason for inclusion: While this comprehensive 245 page monograph is about current and recent research relating to Adult Education in America, the findings and discussion have universal relevance and application. The arguments and questions asked in the chapter *Older Adults Learning in the Technological Age* (pp. 169-185) are particularly germane to both this study and to further research in this area. References to this work appear throughout the thesis.

11: Millar, P. and Falk, I., (2000), *Seniors Online: Online literacy and learning by Senior Citizens in rural centres*, Adult Literacy and Numeracy Australian Research Consortium (ALNARC), Victoria University, Melbourne.

Key words: Literacy; rural older adults; isolation; barriers.

Reason for inclusion: 'This project investigated access to the Internet for rural people over 55 and the literacy and numeracy aspect of that access. It also considered the effects of their interaction with the technology and the implications for community sustainability, training, and lifelong learning' (p. 4). It is useful as a comparison with the study of public facility access by Williamson, Bow and Wale (19: 1997) included in Chapter 3.

- 12: Morris, M. J. (1994), Computer Training Needs of Older Adults, *Educational Gerontology*, 20, pp. 541-555.

Key words: Attitude; stereotypes; training; learning needs of older adults.

Reason for inclusion: This researcher reported 'highly positive' changes in attitudes toward computer technology following an introductory computer course. Computer interaction diaries revealed these older adults 'viewed computer technology favourably contrary to widely held stereotypes' (p. 541). This paper adds to the discussion on attitudes and training of older adults accessing new technology.

- 13: Mott, V. W. (2000), *The Promise - and Peril - of Web-Based Course Delivery in Adult and Continuing Education*, East Carolina University, USA.

Key words: How older adults learn; learning outcomes from IT access; attitudes; technophobia; gender issues.

Reason for inclusion: This study included mature age students engaged in formal web-based courses. 'This research examined the use of web-based instruction in terms of learner attitudes, students' differential use of computer technology and the impact on learning outcomes and technological competency' (p. 1), findings making contributions to Chapters 3 and 5.

- 14: Redding, T. R., Eisenman, G. and Rugolo, J. (1998), *Training in Technology for late Adopters: Learning in Retirement*, <http://www.flinet.com/~redding/R%26R/seniorsdl.pdf>

Key words: Early and late adopters of technology; universal computer literacy myth; computer and technology training.

Reason for inclusion: The paper reports that 'the notion that everyone is computer literate, or has used a computer is simply not true! The number of "late adopters", those deciding or being forced to use a computer for the first time, is the fastest growing segment of the computer and technology training market' (p. 1) The findings from this study about learning in retirement are highlighted in Chapter 7.

- 15: Scott, H. (1999), *Seniors in Cyberspace: Older People and Information*, Melbourne: COTA Strategic Ageing. <http://www.cota.org.au>

Key words: Attitudes to new technology; information needs of older people; awareness and opportunity promotion.

Reason for inclusion: This paper is written from the perspective of an information professional and reviews research from around the world, describes projects and services involving older people in technology and looks at barriers to access. The findings in this paper span the research questions, themes and chapters.

16: Swindell, R. and Vasella, K. (1999), *Older Learners Online: An evaluation of Internet courses for isolated older persons*, Department of Education, Training and Youth Affairs - DETYA.

Key words: Isolation in old age; gender issues; learning via the Internet.

Reason for inclusion: This paper claims to be the first study of older people learning via the Internet. This evaluation of cognitive challenging courses delivered through the Internet found the Internet has the potential to enrich the lives of isolated older adults. A useful comparison can be made between this paper and other core papers studying online learning such as Foskey (5: 2000) and Swindell and Vasella (16: 1999) which are discussed in Chapter 3.

17: Tight, M (1998), *Bridging the Learning Divide: the nature and politics of participation*, University of Warwick, Coventry, U.K.

Key words: Bridging the learning divide; lifelong learning; seeking the non-participant.

Reason for inclusion: This paper evaluates two large British national surveys of a mixed age adult participation in learning. It provides a comparison with a similar large Australian national survey (ANTA 1: 2000), its main contribution being to the discussions on lifelong learning in Chapter 3. The paper also examines and questions the nature of a number of 'learning divides' and the efforts being made to bridge these.

18: White, H., McConnell, E., Clipp, E., Bynum, L., Teague, C., Navas, L., Craven, S., and Halbrecht, H. (1999), Surfing the Net in Later Life: A review of the literature and pilot study of computer use and quality of life, *Journal of Applied Gerontology*, 18 (3), pp. 358-378.

Key words: Older adults; loneliness scale; social isolation; stress; training older.

Reason for inclusion: This psycho-social study is about frail older adults accessing the new opportunities for recreation and communication offered by the Internet. It reports on the 'feasibility of implementing computer-based interventions with the potential of improving the psycho-social well-being among older adults' (p. 359). This paper provides a mean of comparison with Buys' (3: 1998) study of oldest old adults in residential care and adds to the arguments about older adults' attitude toward new technology discussed in Chapter 4.

19: Williamson, K., Bow, A. and Wale, K. (1997), Older People and the Internet, *Link-up*, March, 9-12.

Key words: Older adults; public library settings; positive and negative attitudes to computers; peer group teaching.

Reason for inclusion: This research aims at improving older adults' access to the Internet in a public library setting. This paper offers a comparison with the

Millar and Falk (11: 2000) study of older adults accessing the Internet at public Online Access Centres. Findings from this study are reported in a number of chapters.

20: Williamson, K., Wright, S., Stillman, L., Schauder, D. and Jenkins, L. (2000), *Flexible Workstations in Community Settings for People with Disabilities* Communications Research Forum. <http://www.home.vicnet.net.au/~itnrm>

Key words: People with disabilities; breaking down the barriers; adaptive equipment; public access; training and support.

Reason for inclusion: This paper documents a project aimed at breaking down the barriers to the use of the Internet faced by people with disabilities. It evaluates an action research study trialling adaptive hardware and software in community settings such as public libraries. 38.8% of the sample were adults over 55, the largest group being in the 65+ bracket suggesting a correlation with age-related impairments and disabilities. Findings are included with the discussion on training and support in Chapter 7.

THE EMERGENT THEMES

- Learning new technology in later life
- Attitude toward learning new technology
- Gender and age learning differentials
- Incentives and barriers to ICT learning
- Training implications for older learners

Search words: Older adults', 'learning' and 'new technology' in various combinations.

APPENDIX B: INFORMATION SHEET, CONSENT FORM AND INTERVIEW QUESTIONS



UNIVERSITY OF TASMANIA

SENIORS USING COMPUTERS TO ACCESS THE INTERNET

INFORMATION ABOUT A RESEARCH PROJECT JANUARY 2002 to DECEMBER 2005

People over 50 years of age who are involved in formal or informal computer or Internet training sessions or individual or group support, are invited to take part in this research which will investigate factors affecting access and use of the Internet.

The purpose of the research is to find out how people who have not grown up in the information and communication technology era, are learning about and from the Internet and what they are doing with what they learn.

The research will take the form of several interviews about your Internet usage, with visits in between to check on your progress and any concerns you may have. These conversations will be taped to ensure your views are accurately recorded. Some participants may volunteer to keep journal entry records of their Internet experiences. No remuneration will be provided to participants.

Information provided by participants is completely confidential. No names or identifying descriptions will be used in these tapes or in any reports. Participation is entirely voluntary and those who agree to take part in this study are not obliged to answer any questions and may withdraw from the study at any time.

The chief investigator is Dr. Sue Kilpatrick, Associate Director of the Centre for Research and Learning in Regional Australia at the University of Tasmania in Launceston, phone 03 6324 3018.

If you have any concerns of an ethical nature or complaints about the manner in which the project is conducted, they may contact the Chair or Executive Officer of the University Human Research Ethics Committee.

The Chair is Dr Janet Vial, phone 03 62 264842 and the 'phone number of the Executive Officer is 03 62 262763.

If you are interested in taking part in the study, or require further details, please contact Mrs. June Hazzlewood, who is conducting the research as part of a Doctorate of Philosophy, phone 03 6327 2562.

You will be given copies of the information sheet and statement of informed consent to keep.

STATEMENT OF INFORMED CONSENT

SENIORS' ACCESS AND USE OF THE INTERNET

1. I have read and understood the 'Information Sheet' for this study.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves the following procedures:

Two or three interviews with the researcher between January 2002 and December 2005, which will be taped. Meetings between interviews may include informal group discussions with other seniors, family, friends or those providing Internet training and support.

Questions will seek information on the extent and nature of Internet experience and training and support received, also details about what is learned and how this knowledge is used personally and in the community.

I understand that all research data will be treated as confidential.

5. Any questions that I have asked have been answered to my satisfaction.
6. I agree that research data gathered for the study may be published provided that I cannot be identified as a subject.
7. I agree to participate in this investigation and understand that I may withdraw at any time.

Name of subject

Signature of subjectDate.....

I have explained this project and the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation.

Name of investigator

Signature of investigatorDate.....

INTERVIEW QUESTIONNAIRE

How would you describe the amount and type of training and support you have received since you first used a computer to access the Internet?

Does the training or support you have received match your expectations and learning needs and interests?

How has the training or support you have received helped you to find the information you need or are interested in on the Internet?

What advice about training and support would you give to an older person with no technology experience who wishes to learn about the Internet?

How does your use of what you learn from interaction with the Internet affect yourself, your family and friends or your community?

How has your attitude toward computers and the Internet changed since your early experiences?

How would you describe the high and low points of your journey along the Internet super highway?

What are your immediate and longer term goals in connection with computer use and Internet access including further training and/or support?

Do you find it easy to move around in the websites you have visited and if not how could these be made more easy to use?

What problems do you experience in using a computer, connecting to the Internet or finding information you are looking for?

Describe how you send and receive emails, search the world wide web for information or use the Internet for banking and shopping.

What do you know about hardware and software which is available to assist you with any physical impairments or disabilities?

Who would you like to include in informal discussion about the progress made in your computer and Internet use?

How would you sum up your opinion of the value or otherwise of the Internet generally and specifically?

APPENDIX C: CANADIAN/AUSTRALIAN STUDY INFORMATION SHEET, CONSENT FORM AND INTERVIEW QUESTIONS

Collaborative Study 1 CONSENT FORM

I agree to participate in the research project titled *Determinants of Health Maintenance by Older Adults Learning to Use Computers*, being conducted by Canadian Researcher Jane Fraser, Graduate Student at Northern Illinois University; Co-Researcher June Hazzlewood, Graduate Student at University of Tasmania; and Co-Researcher Patrice Boyles, Graduate Student at Northern Illinois University. I have been informed that the purpose of the study is to collect data on older adult learners in Canada, Australia and the United States of America, and discover whether learning affects health.

I understand that my participation is voluntary and may be withdrawn at any time without penalty or prejudice, and that if I have additional questions concerning this study, I may contact Jane Fraser at (807) 622-3230. I understand that if I wish further information regarding my rights as a research subject, I may contact the Office of Research Compliance at Northern Illinois University at (815) 753-8588.

I understand that the intended benefits of this study include my contribution to the body of knowledge on the needs of older adult learners, and how learning may contribute to healthy aging. Also, comparing the results in three countries will assist international knowledge. I have been informed that there are no foreseeable risks I could experience during this study. I understand that all information gathered during this experiment will be kept confidential and anonymity of subjects will be maintained by assigning a number to each participant.

I realize that Northern Illinois policy does not provide for compensation for, nor does the University carry insurance for participation in University sponsored research projects. I understand that my consent to participate in this project does not constitute a waiver of any legal rights or redress I might have as a result of my participation. I acknowledge that I have received a copy of this consent form.

Signature of Subject

Date

Older Adult Survey Questions
Canadian Australian Research Project

Instructions

Please answer the following 10 questions by selecting from 1 to 5.

Strongly	Strongly Disagree	Disagree	Uncertain	Agree	
		disagree			agree
1. I frequently research health topics on the Internet.....	1	2	3	4	5
2. I discovered that upgrading my education has improved my memory.....	1	2	3	4	5
3. My e-mail communication with family has decreased my loneliness.....	1	2	3	4	5
4. My educational studies prove I can still learn.....	1	2	3	4	5
5. I think my physical energy level has increased due to my studies.....	1	2	3	4	5
6. I enjoy the social experience of learning with other seniors.....	1	2	3	4	5
7. My children & grandchildren support my return to school.....	1	2	3	4	5
8. My self-esteem/confidence has increased as I learn new skills.....	1	2	3	4	5
9. I participate in other leisure activities eg tai chi....	1	2	3	4	5
10. I am volunteering in community activities with my new skills.....	1	2	3	4	5

Fraser J. (2004). *Determinants of Health Maintenance for Canadian and Australian Older Adult Learners*. Unpublished PhD thesis, Northern Illinois, USA.

Example of e-mail data exchange between collaborative peer researchers
Fraser and Hazzlewood between 2002 and 2004.

To: Jane Fraser
From: June Hazzlewood

Dec-02						
Survey replies from 40 OPEN Computing Club members						
Replies from 10 members of other groups are attached	1	2	3	4	5	
1 Frequently research health topics on the Internet (Our seniors do this but I have a paper to the contrary)*	6	6	8	8	12	40
2 Upgrading education discovery improved memory (Yes but smart answers re ICT - 'can't remember' etc.)	2	2	10	22	4	40
3 e-mail family contact decreased loneliness (e-mail contact with friends and chat groups also)	5	0	7	20	8	40
4 Education studies prove can still learn (Wholeheartedly endorsed - dropouts not surveyed)	0	2	0	4	34	40
5 Studies increased physical energy level (Mental stimulation yes - physical activity not changed)	6	16	14	0	4	40
6 Elder learning social experience enjoyed (This social capital aspect was almost unanimous)	0	0	2	4	34	40
7 Extended family support return to study (Generally very positive - more friends and children)	2	0	8	20	10	40
8 New skills learned increased confidence (Equally positive - all but very nervous agreed)	0	2	4	16	18	40
9 Participation in other leisure activities (These seniors are involved in other activities already)	2	2	0	8	28	40
10 Volunteering new skills in commiunity activities (Most willing but some needed more confidence)	4	6	8	14	8	40
	27	36	61	116	160	400

Australian and Canadian Percentages for Survey Responses on a 5-Point Likert Scale

Fraser and Hazzlewood collaborative Canadian/Australian research 2002-2004

1 Internet Searches

CA	17.4%	30.4%	13.0%	34.8%	4.3%	39.1%
AU	15.0%	15.0%	20.00%	20.0%	30%	50.0%

2 Improve Memory

CA	0.0%	4.3%	43.5%	17.4%	34.8%	52.2%
AU	12.5%	5.0%	25.0%	55.0%	10.0%	65.0%

3 E-mail

Ca	4.3%	17.4%	13.0%	47.8%	17.4%	69.5%
AU	12.5%	0.0%	17.5%	50.0%	20.0%	75.0%

4 Lifelong learning

CA	0.0%	0.0%	4.3%	47.8%	47.8%	95.6%
AU	0.0%	5.0%	0.0%	10.0%	85.0%	95.0%

5 Increase Energy

Ca	0.0%	4.3%	47.8%	34.8%	13.0%	47.0%
AU	15.0%	40.0%	35.0%	0.0%	10.0%	10.0%

6 Social Experience

CA	0.0%	0.0%	8.7%	52.2%	39.1%	91.3%
AU1	0.0%	0.0%	5.0%	10.0%	85.0%	95.0%

7 Family Support

CA	4.3%	0.0%	26.1%	47.8%	21.7%	69.5%
AU	5.0%	0.0%	20.0%	50.0%	25.0%	75.0%

8 Self-Esteem

CA	0.0%	4.3%	21.7%	47.8%	26.1%	73.9%
AU	0.0%	5.0%	10.0%	40.0%	45.0%	85.0%

9 Other Leisure

CA	0.0%	8.7%	17.4%	39.1%	34.8%	73.9%
AU	5.0%	5.0%	0.0%	20.0%	70.0%	90.0%

10 Volunteering

CA	4.3%	30.4%	30.4%	21.7%	13.0%	34.7%
AU	10.0%	15.0%	20.0%	35.0%	20.0%	55.0%

APPENDIX D: AMES STUDY INFORMATION SHEET, CONSENT FORM AND INTERVIEW QUESTIONS

Peer Collaborative Study 2

Case study 2: Older Persons Electronic Network (OPEN)

Taylor T. & Rose J. (2004). *Bridging the Divide: Older learners and new technologise*. Research & Learning Innovation, Melbourne: AMES
<http://www.avetra.org.au/publications/documents/PA028Taylor.pdf>.

Taylor T. Rose J, & Wiyono A. (2004). *Small Steps and Giant Leaps*. Older Learners and ICT: Strategies and Case Studies. ANTA Adult Literacy Innovative Project 2003-2004. Melbourne, Australia. www.dest.gov.au/literacynet/documents/Part2-ICT_OlderLearners.pdf -

Launceston, Tasmania

OPEN, the Older Persons Electronic Network, is essentially a community-based peer led ICT program. It was established in October 2001 and has its origins in the Year of the Volunteer projects conducted in Launceston at that time:

Hazzlewood (2002) describes how this network aims to narrow the digital divide by providing guided group-travel on the Super Highway for lifelong and lifewide learners in this regional area of northern Tasmania. The objectives of the program are:

- to provide equity of access to eCommerce via the Internet for the target group, many of whom face barriers in accessing and using new technology;
- to disseminate accurate and timely information about the relevance and value of the Internet to older adults;
- to assess needs and interests of a group not at present being catered for and offer options for training, support and the opportunity to practise skills learned;
- to canvass wide community participation and recruit peer group and inter-generational volunteer eMentors and invite guest presenter contributions; and
- to explore ways of achieving sustainability by exploring options such as the formation of a self-supporting computer club.

While there are other training and support options in the Launceston area, the OPEN Computing Program is attracting a group of people who find that many computer courses are too demanding, too long and/or move at too fast a pace. Some OPEN participants are people who lack the confidence to attend formal courses and are not keen to attend existing informal support groups which are usually held in the evenings and are once again, too advanced for these 'capable and curious 'novices.

Context

Course: Certificate II in Information Technology (eLearn course) as well as various non-accredited application training courses.

Sector/environment: Free to students, TAFE subsidised materials, NGO venue, Internet provision

Delivery modes

TAFE Online eLearn resources placed in WebCT, with OPEN responsible for overall supervision and support provided by volunteers.

Methodologies

A number of approaches were used in this study:

- a review of national and international research into older learners and strategies that support acquisition of ICT skills.
- a field survey of older learners engaged in a range of ICT training contexts. The survey involved 50 learners engaged in formal and informal training in a range of settings in Victoria, Tasmania and South Australia.
- interviews with teachers, trainers and program coordinators involved in the planning and delivery of ICT programs to older learners in both formal and informal settings in Victoria, Tasmania and South Australia.

- case studies at four different training sites involving 78 learners in all, and five teachers, three of them also program coordinators.

AMES ICT SURVEY BY COORDINATOR JUNE HAZZLEWOOD

PART 1 – COURSE DETAILS

Name:
Course – Content/level (eg Introduction to Word - beginners)
Beginners to Intermediate
Accredited (yes, no, type of accreditation)
Yes and no
Intensity (days/hrs per week, number of weeks)
1 to 2 three hour sessions per week x 10 to 12 weeks
Location (TAFE, Community Centre, school, etc)
Seniors Computer Club
Delivery mode (percentage face-to-face, online, etc)
TAFE staff Online eLearn resources, overall supervision, assessing with volunteer face to face support
Funding source (Government, fee for service, etc)
Free to students, TAFE subsidised materials, NGO venue, Internet provision

PART 2 – LEARNER PROFILE INFORMATION

Age	Number Male	Number Female	Location of course	Number Male	Number Female	State	Number Male	Number Female
under 40								
40 – 45								
46 – 50								
51 – 55		1	Regional city			Tas		
56 – 60		3	Regional city			Tas		
61 – 65	1	2	Regional city			Tas		
65 plus	3	15	Regional city			Tas		

Educational background	Number Male	Number Female
Secondary school - not completed		3
Secondary school – completed	2	10
Formal vocational qualification (eg trade, IT, etc)	2	6
University qualification		2
Skills & self development courses		
Non-accredited courses or programs		

Employment status	Number Male	Number Female	Employment sectors (eg transport)
Employed – full time	1		
Employed - part time			
Self-employed			
Voluntary work	2	18	
Retired – voluntary	1	3	
Retired – forced early			
Retrenched			
Unemployed			
Other			

Seeking to re-enter the workforce	Number Male	Number Female
full time		
part time	1	3
fulltime or part time		

First Language	Number Male	Number Female
English	4	18
Greek		1
Russian		1
German		1

English language & literacy level		ICT skills level *							
Oracy	Literacy	None		Basic		Intermediate		Advanced	
		Male	Female	Male	Female	Male	Female	Male	Female
Low	Low								
Low	Inter								
Low	High								
Inter	Low								
Inter	Inter		1				2		
Inter	High								
High	Low								
High	Inter								
High	High								

Using the table:

You have three learners with high oracy and low literacy skills. One has no ICT skills and two have basic ICT skills. In the **High Oracy, Low Literacy** row enter number 1 in the **None** column and number 2 in the **Basic** column.

* See notes provided for explanation of **Basic, Intermediate and Advanced** level ICT skills

PART 3 - TEACHING STRATEGIES

What strategies did you use to ensure effective participation and ICT training outcomes for these learners?

1. **Briefly describe some general teaching and learning strategies which worked with these learners.**

If you had a range of language literacy and ICT literacy in your group and used different strategies with different learners, relate your comments to the learner profile/s reported in **PART 2** of this survey. Some strategies may be suitable for a mixed group of learners (all profiles) while others may support a specific learner profile (eg low lit/basic ICT skills). **You might comment on:**

- | | |
|--------------------|---|
| • teaching methods | • length of course |
| • content | • time (hrs per day; days per wk; am or pm) |
| • pace | • other? |

- This group is typical of previous groups. There is a wide variance in time taken to complete activities and assessment projects. An equally wide range of attitudes to computer technology is also noted.
- The course is structured to allow every student to achieve some initial and continuing satisfaction.
- Accreditation for the total number of competencies is conferred, unless a slower pace preferred.
- A second chance is offered with a period in between to consolidate what is learned before re-enrolling.
- A second chance is offered with a period in between to consolidate what is learned before re-enrolling.
- Full components of basic word processing and spread sheet application are covered.
- Chat sessions and discussion boards, email within and outside the course and exploration of the web based resource are included as well as searching for and transferring text and pictures from Internet to word documents.
- This course is not suitable for students with low literacy levels or those needing a great deal of support.
- Evaluations have results in modification of the course to allow for basic plateau achievement of the group. .
- Extension opportunities are provided for the front runners or who commit large amounts of time to the course requirements.
- Hard copy material for reference necessarily results in the text being far to small for comfortable reading. This comment also applies too much of the text on web pages where the size cannot be enlarged
- Much of the course matches needs, interests, aspiration, capacity, understanding and time frame.
- These students who return after graduation as volunteer helper reinforce their learning.

2. **Can you provide an example of a lesson plan, activity or series of activities that worked well with the learners? (Please attach)**

Comments:

- Each session starts with students logging on to the WebCT site, checking emails from TAFE tutor. And reading and answering the postings on the discussion board.
- Students look up their programs and complete any quizzes. The social interaction is important to the students who interact online with each other and their tutor.
- Chats are arranged a couple of times during the course to build confidence.
- The tutor sends virtual rewards – Rolls Royces to flowers or chocolate bars for work sent in.
- At the beginning of the second and third hour, a set exercise is demonstrated on the data projector with volunteers ensuring students are not lost
- The course is balanced between assignment activities and practice exercises.
- Colour boxed cards to introduce new topics and provide extension material are planned.

3. Much of the research indicates that it is important to establish a context for the ICT training. Was this important as a means of engaging your students? If so, how did you go about establishing a context for learning?

(ie what these skills could enable learners to do – eg online banking; contact (email) with family and friends; workplace communication; etc)

- The students are 'selected from a short list' of trainee project officer applicants in a fictitious online
- Centre. They fill in time sheets which are used in later spread sheet exercises and all activities and
- Exercises apply directly to such employment. For example, letters to Centre volunteers are used to learn
- Saving and file management (what are you going to call it? Where are you going to put it? (hard drive f
- Folder or A floppy drive? Have you clicked the Save button? Ads for the Centre cover Fax and Memo
- Templates, formatting etc. A given set of files is used for moving around documents , formatting,
- Copy, cut and paste. There are set requirement for assessment presentation, requiring uploading and
- Downloading. Internet searching for Centre purchases is incorporated as well as simple mailmerge and
- Spreadsheet records for the 'Centre'. A Print screen in Windows Explorer or other suitablea format is
- One of the assignments showing extent of work completed and competency levels required in paid or
- Unpaid work already engaged in or anticipated. The accent is on good natured cooperation and fun.

4. Did the learners need to have a 'comfort zone' established? How did you do this?

- a. Were they threatened by being in a learning situation?
b. Were they threatened by using ICT?

- The students are placed in a friendly comfort zone environment from day one as volunteer peer tutor
- Assistants are introduced as students who a short time before were themselves beginners
- This reinforce the training and grow in their confidence and competence assisting the volunteer tutors.

- The 25 students in each intake are divided into small groups with a high ratio of tutors and assistants to students.
- Students who progress quickly are not held back, but here time is the limiting factor for all. s
- Third age seniors who seek this course while motivated, are involved in other community volunteering or recreational activities, have family and caring responsibilities or travel to other states.
- The time limit placed on completion of the course for administrative reasons is somewhat inhibiting but is also a goal.

5. How was appropriate and effective support provided?

(ie What specific support did these learners need?)

- Learners need someone sitting beside them initially and at hand when things are not as they expect.
- One to one or one to two within a small group with a variety of material used to try to cater for individual learning styles is ideal.
- For example, we would like to have the funding to pilot a multi-mode delivery package with a self-paced within a framework approach allowing for visual print material, audio (with earphones) interactive video and tutorials for each stage, not optional but integrated into the course.
- Top down tutor instruction kept to a minimum – housekeeping and introduction of new work.
- Team discussions as in workplace in-service training could be introduced as this group has wide experience and much to offer to any volunteer or paid position they may subsequently apply for, as has happened with several eLearn graduates.

PART 4 – REVIEW

1. On reflection, is there anything you think you would do differently another time? Or anything that could improve the training?

- Mostly everything from the first of the four courses we have run. As tutors who volunteer on different days, it is essential to have an introductory induction for new tutors and assistants (one or two from each course) as well as the induction Process which is built in to the course for students themselves.
- We have learned from experience that this course, ostensibly for beginners should be preceded by a basic beginners course.
- As students have obligations and age-related impairments regular attendance is difficult.
- A self-paced course with the same e-mentor would make sure understanding exists.
- All our members do not elect to do the eLearn online course and many choose less formal, more relaxed activities such as family history, graphic etc.

2. Wish list: What would you require to implement the “perfect” ICT training program for these learners?

- A colour-coded box to match each student's learning style, arrived at by a pre-course questionnaire and completion of two or three set exercises using different methods of presentation to be self-assessed and selected as preferred method of tuition.
- Those who achieve success and accept challenges are able to adapt to other learning styles as they progress.
- It is not easy to learn in a class where the computers are different from those at home. A home visit program with trained volunteers to supplement the socially important group sessions would help.

3. Are there any emerging themes in feedback about the training that you get from learners? (positive and negative)

- Success in small and large amounts negates the frustration experienced by all novice ICT learners.
- Age related cognitive slowing is evident in most students (and also in peer tutors).
- Short term memory loss is perhaps second only to sight impairment as a deterrent to learning.
- It is important to build on skills learned with meaningful and relevant exercises for all but the intrinsically motivated.
- Our students are motivated by choice or necessity (emailing family etc.).
- Many in this age group, including NESB, who could benefit are not being catered for.

APPENDIX E: THESIS DATA ANALYSIS TRANSCRIPT EXCERPT

Researcher	Wife	Husband
Internet Awareness	I came back from Sydney in 1997, with a desire to go on the Internet - a desire to learn more. <u>That's when I signed up with the library and went there for about 6 months</u> - all through the winter - after that I signed up with XYZ broadband, for 10 hours a month.	Difficult to pin a time down - probably became involved about 3 or 4 years ago -
Public access try before buy WINDOW SHOPPER		
Home computer/	Yes. I wanted to waste their money not ours to find out whether we wanted to go onto the Internet or not. Alf has had a computer for a long time. I started using a computer back in 1990 with the old Word Star but didn't see I could do much with it.	Yes
EARLY ADOPTERS	In 1991, I finished my degree - my nursing degree - that's when I was using it for assignments. The Internet didn't come till 1997 and with it a desire to find out more.	
Higgs?	In Egypt there's a Theban mapping group KB5. You can do a virtual archaeological survey and go down into it and find out how they are going. When it started off, I thought the website was pretty good but if you go onto it now, it is absolutely superb - amazing - that I can sit in my own office and go off into Egypt. Egyptology has always fascinated me. I was just stunned.	I've researched a lot of topics and you follow one step down the line where you get clues that lead you to where you want to go.
VIRTUAL TRAVELLER		
Links?	I thought, I wonder if there's something on the Tower of London? I found a virtual tower of London tour and they even have a ghostly befeater who introduces it.	
SEARCHERS		
Accessibility navigating websites?	I think people may have trouble in clicking back, you know, on the Tool Bar or clicking on - just to be able to move through that. I guess we've learned how to do it - it didn't take very long - trial and error type.	
SELF-DIRECTION Learning styles?	<u>Hands on - I do better doing it - I don't mind somebody showing me but I like to get</u>	If you follow your nose you get there

HANDS ON - VISUAL	<u>hands on and do it. I like someone to stand at my shoulder or sit beside me till I get some skills.</u>	<u>Visual</u>
What other online interests?	Marjongg - I don't play it online, <u>but I did look up the rules on the Net - I needed to find out the rudiments.</u>	I once looked up codlin moths - to get some information - the Britannica didn't have much - very brief, very rudimentary, but I ended up with a couple of university sites and found out how they control them in the States. If I want to look up a subject I just go through Google.
GENDERED \ INTERESTS		<u>I've not played any games on the Net and I've not downloaded any, but I do look up a range of topics I'm interested in.</u>
Health information search?		I've found out that the practitioner I attend is not to date on some things - that happens - I don't suppose you can expect the poor guy to be up to date on everything..
Information Validity?	If I might interrupt here - in 1999 I came across a brochure, it was a health promotion brochure - it was talking about alternatives to certain heart medications - and it was talking about a substance called ABC123 - I wanted to know more about it so I went onto the Internet - found a website which was brilliant – <u>I've read many professional papers and when I found this one, the evidence in the report was powerful.</u>	
CAUTIOUS CHECKING		<u>The sites I've been to have been referenced well and correlate with text books we've got here anyway - it's just updating what the text books have to say.</u>
WHAT IS DONE WITH FINDINGS	This site had all the hallmarks of being genuine . . . as a result his health improved - just took him up another level and this was purely from looking in a brochure, <u>going onto the Internet and finding out what we needed to know to pass on to the GP because he was running out of medical options.</u>	

Recent formal ICT training?	We went off to that Adult Education course 'What in he Box' - <u>now I can take of the case and I know where the seams are. I found there was a screw loose and I fixed it and got my clean make up brush and a paint brush and the dust buster</u> , - we took the fan out and put in a drop of machine oil.	<u>I put some propyl alcohol on to clean it up.</u>
FORMAL COURSE		
Initial reaction to computers? FEAR AND APPREHENSION	I was terrified about turning it on. Learning how to turn a computer on was a great advance. I had all those apprehensive feelings -	
Other formal training or support		I did a TAFE course about Excel - a bit of a waste of time, a waste of time - you see I've learnt Excel myself - and written my own accounting program - the course that we did in a lot of areas was too elementary and in a lot of other areas was just way out of my range - things I have no concern about or not terribly interested in - that's not quite the right word - the things that I've learnt are the things which I've needed to know.
FORMAL COURSE TOP-DOWN NEGATIVE		
LEARNING MATCHING NEEDS	I'll tell you what would help - for example in that Excel course, <u>if he'd had one-to-one help available to him who knew what he wanted</u> - they'd know the course - macros were a bit advanced for the actual Excel course but if he knew who to ask . . . -	<u>They didn't cover what I wanted to know</u> - even though they said in the advertisement it did and that was macros and I thought, hey these guys are going to know all about this and I took a problem I had in and they didn't know how to solve it
Suggestions for training Improvement?	Formal support - two adult education courses on computing basic computing course and an intermediate course and then I did a scanning course because we had a scanner - <u>I actually asked them to suggest certain course . . .</u>	<u>You get what you pay for but I still think that if people really want to know they can learn - I think it's really the individual motivation</u>
SELF DIRECTED LEARNING		

Help when needed?	I don't mind paying somebody ten dollars for half an hour if you're getting what you want - but <u>I have learned how to desktop publish in the earlier courses</u> um and I've <u>been able to use that with organisations. I use the Help menu if I'm really desperate</u> and as far as the Internet was concerned that was a hands on thing . I did a little bit in the Online Centre and even joined SeniorLink but I found the questions I had I wasn't getting answers to - the main steam questions asked were fairly basic –	Either a need or a desire
NEED FOR E-BUDDY TRAININGN	<u>I had a well-meaning e-Buddy who proved to be a bit of a disaster</u> - she did what I would have done which wasn't the right thing to do - delete instead of uninstall.	
Cost barrier? COST NO BARRIER	I think that <u>by today's standards I'm not convinced that cost is a problem</u> - I think we're a lot better off today – we're on a pension and get a concession - I think you need to pay for what you get.	<u>We help each other.</u> <u>I say "use it or lose it".</u>

RESEARCHER'S INITIAL COMMENTS

Early ICT adopters. Home computers and Internet access

Complementary gendered ICT use. (E-mail use not shown in this extract).

Subjects fit typologies – window shoppers, e-mailers, searchers, e-Seniors.

Themes reflected in responses – lifelong learning, ICT attitude, gender and age.

Use ICT knowledge and skills in volunteer community service.

Self-directed learners who recognise training and support needs.

Access health and interest Internet information logically and responsibly.

Caution shown in both financial expenditure and validity of online information.

Attitude to ICT changed from initial fear to competent and enthusiastic.